



SEQUENCE LISTING

and 15
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JUN 02 2003
TECH CENTER 1600/2900

<110> INNOGENETICS N.V.

<120> New sequences of hepatitis C virus genotypes and their use as prophylactic, therapeutic and diagnostic agents.

<130> 2551-105

<140> US 08/836,075

<141> 1997-04-21

<150> EP 94870166.9

<151> 1994-10-21

<150> EP 95870076.7

<151> 1995-06-28

<160> 302

<170> PatentIn version 3.1

<210> 1

<211> 327

<212> DNA

<213> hepatitis C virus

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 ggccccaggn ngggtgtgcg cgcgactagg aagacttccg agcggtcaca acctcgtggc 180
 aggcgacagc ctatcccca ggctcgycgg yccgagggca ggtcctgggc tcagcccggg 240
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 cgcggtcttc ggccaattg gggcccc 327

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Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
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Arg Arg Pro Xaa Xaa Xaa Xaa Xaa Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Xaa Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Xaa Arg Xaa Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro
100 105

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gtgtatcatg tcaccaacga ctgttccaac tcgagcatca tctatgagat ggacggtatg	180
atcatgcact acccaggggtg cgtgccctgc gttcgggagg ataaccatct ccgctgctgg	240

atggcgctca cccccacgct tgcgggtcaaa aaygctagtg tccccactrc ggcaatccga	300
cgtcacgtcg acttgcttgt tgggggnncc acgttctgtt ccgctatgta cgtggggrgac	360
ctttgcgggt ctgtcttctt cgctggccag ctattcacct tttcaccctg catgcaccat	420
acaacgcagg agtgcaactg ctcaatc	447

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Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
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Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Xaa Thr Ala
20 25 30

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Asp Gly Met Ile Met His Tyr
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asp Asn His Leu Arg Cys Trp
65 70 75 80

Met Ala Leu Thr Pro Thr Leu Ala Val Lys Xaa Ala Ser Val Pro Thr
85 90 95

Xaa Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Xaa Xaa Thr Phe
100 105 110

Cys Ser Ala Met Tyr Val Xaa Asp Leu Cys Gly Ser Val Phe Leu Ala
115 120 125

Gly Gln Leu Phe Thr Phe Ser Pro Arg Met His His Thr Thr Gln Glu
130 135 140

Cys Asn Cys Ser Ile
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ggccccaggt tgggtgtgcg cgcgaccagg aagacttccg agcggtcgca gcctcgtgac 180
aggcgacagc ctattcctaa ggctcgccag tccgatggca gnnccctgggc tcagccaggg 240
catccctggc ccctctatgg caatgagggc tgcggatggg cgggatggct cctgtcccc 300
cgcggtcttc ggcccagttg gggcccc 327

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Arg Arg Pro Gln Asp Val Lys Xaa Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Asp Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Gln Ser Asp Gly Xaa Xaa Trp Ala Gln Pro Gly
 65 70 75 80

His Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro
 100 105

<210> 7
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 gtatatcatc tcaccaatga ctgttccaac tcgagcatca tctatgagat gagtggtatg 180
 atcttgcaacg ccccaggggtg tgtgccctgc gttcgggaga acaactcttc tcgttgctgg 240
 atgccrctca cccccacgct tgcgggtcaaa gacgctaata tccctactgc ggcaatccga 300
 cgccatgtcg acttgctggt tgggacagcc gcgtttcggt ccgctatgta cgtggggggac 360
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 acaacacagg agtgcaactg ctcaatc 447

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Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
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Ile Phe Leu Leu Ala Phe Leu Ser Cys Leu Thr Val Pro Thr Thr Ala
20 25 30

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Ile Tyr Glu Met Ser Gly Met Ile Leu His Ala
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Asn Asn Ser Ser Arg Cys Trp
65 70 75 80

Met Xaa Leu Thr Pro Thr Leu Ala Val Lys Asp Ala Asn Val Pro Thr
85 90 95

Ala Ala Ile Arg Arg His Val Asp Leu Leu Val Gly Thr Ala Ala Phe
100 105 110

Arg Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val
115 120 125

Gly Gln Leu Phe Thr Phe Ser Pro Arg Leu Tyr His Thr Thr Gln Glu
130 135 140

Cys Asn Cys Ser Ile
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ggccctagat tgggtgtgcg cgcagcgcgg aagacttcgg agcggtcgca acctcgtggg 180
aggcgccaac ctattcccaa ggagcgccga cccgagggca ggt 223

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<400> 10

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Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		
Gly	Val	Tyr	Val	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala
	35						40					45			
Ala	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro
	50					55					60				
Ile	Pro	Lys	Glu	Arg	Arg	Pro	Glu	Gly	Arg						
65					70										

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ggccccaggt tgggtgtgcg cgcgacgagg aagacttccg agcggtcgca acctcgcgga	180
aggcgacagc ctatcccca ggctcgccga cccgagggca ggtcctgggc tcagcctggg	240
tacccatggc ccctctatgc taacgagggc tgcggatggg cgggatggct cctgtcccct	300
cgcggtcccc gtcttagctg gggccccaat gacccccgac gtagatcacg caatttggg	360
aaggatcatc ataccctaac gtgtggcttc gccgatctca tgggggtacat tccgctcgtc	420
ggcgcccccc tagggggcgc ttccagaacc ctgncacatg gtgtccgggt cctggnaggc	480
ggcgtgatnn nnnnnnnnnn naaccttcn ggttgctctt tnnctatctt cctcttggcn	540
ttactctctt gcctcacagt cccacctct gcctatgagg tgcacagcac aaccgatggc	600
taccatgtca ctaatgactg ttccaacggc agcatcgtat atgaggcaaa ggacatcatc	660
cttcacacgc ctgggtgngt gccctgcata cgggaaggca atatctcccg ttgctgggta	720
ccgctcacc ccacgctcgc agcgcggtac gcgaacgctc ccatcgatga ggtgcggcgt	780
cacgtcgacc tcctcgtagg ggcagccgtg ttctgctcag ccatgtacat tggggacctt	840
tgtgggggcg tcttcctcgt tgggcaattg ttcaccttca cgtcccggcg gcattggacg	900
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Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala

35

40

45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
 130 135 140

Gly Gly Ala Ser Arg Thr Leu Xaa His Gly Val Arg Val Leu Xaa Gly
 145 150 155 160

Gly Val Xaa Xaa Xaa Xaa Xaa Asn Leu Xaa Gly Cys Ser Xaa Xaa Ile
 165 170 175

Phe Leu Leu Xaa Leu Leu Ser Cys Leu Thr Val Pro Thr Ser Ala Tyr
 180 185 190

Glu Val His Ser Thr Thr Asp Gly Tyr His Val Thr Asn Asp Cys Ser
 195 200 205

Asn Gly Ser Ile Val Tyr Glu Ala Lys Asp Ile Ile Leu His Thr Pro
 210 215 220

Gly Xaa Val Pro Cys Ile Arg Glu Gly Asn Ile Ser Arg Cys Trp Val
 225 230 235 240

Pro Leu Thr Pro Thr Leu Ala Ala Arg Ile Ala Asn Ala Pro Ile Asp
 245 250 255

Glu Val Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Val Phe Cys
 260 265 270

Ser Ala Met Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val Gly
 275 280 285

Gln Leu Phe Thr Phe Thr Ser Arg Arg His Trp Thr Val Gln Asp Cys
 290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Ile Thr Gly His Xaa Xaa Xaa
 305 310 315

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 ggccccagat tgggtgtgcg cgcgacgaga aagacttctg aacggtccca gccacgtgga 180
 aggcgcacagc ccatccctaa agatcggn gn gccactggca ggtcctgggg acgtccagga 240
 tatccctggc ccctgtatgg gaacgagggg ctcggtggg caggatggct cctgtccccc 300
 cgaggctctc 310

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20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Xaa Ala Thr Gly Arg Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly
100 105

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 gggaacctcc ctggttgctc cttttctatc ttctngttgg ctcttctgtc ttgtgtcacc 180
 gtgcctgtct ctgncgttga ggtcaaaaat accagtcagg cctatatggc aaccaacgac 240
 tgctccaaca acagcatcgt atggcaattg gnggacgcgg tgcttcatgt tcctggatgt 300
 gtcccctgcg agaatagctc cggtcgggtc cactggttga tcccgatctc gcccaacata 360
 gccgtgagca aacctggtgc tctcaccaag ggactgcggg cacgcattga tgccgtcgtg 420
 atgtccgcca ccctctgctc tgccctgtac gtgggagatg tgtgcggcgc agtgatgata 480
 gctgcacagg ctttcatcgt ggcaccgaag cgccattact tcgtccagga atgcaattgc 540
 tccatatacc caggccacat tacaggtcac cgcatggcg 579

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Thr Cys Xaa Xaa Ala Asp Leu Met Gly Tyr Xaa Pro Val Val Gly Ala
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Pro Val Gly Gly Xaa Ala Arg Ala Leu Ala Xaa Gly Val Arg Val Leu
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Glu Asp Gly Ile Asn Tyr Xaa Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Xaa Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser
50 55 60

Xaa Val Glu Val Lys Asn Thr Ser Gln Ala Tyr Met Ala Thr Asn Asp
65 70 75 80

Cys Ser Asn Asn Ser Ile Val Trp Gln Leu Xaa Asp Ala Val Leu His
85 90 95

Val Pro Gly Cys Val Pro Cys Glu Asn Ser Ser Gly Arg Phe His Cys
 100 105 110

Trp Ile Pro Ile Ser Pro Asn Ile Ala Val Ser Lys Pro Gly Ala Leu
 115 120 125

Thr Lys Gly Leu Arg Ala Arg Ile Asp Ala Val Val Met Ser Ala Thr
 130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile
 145 150 155 160

Ala Ala Gln Ala Phe Ile Val Ala Pro Lys Arg His Tyr Phe Val Gln
 165 170 175

Glu Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met
 180 185 190

Ala

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 ggccccaggt tgggtgtgcg cgcgcgaagg aagacttctg aacggtccca gccacgtgga 180
 aggcgccagc ccattccaaa agatcggcgc gccactggca agtcctgggg acgtccagga 240
 tacccttggc ccctgtacgg gaacgagggc ctcggctggg cagggtggct cctgtcccc 300
 cggggctctc gccctcgtg gggcccaaac gacccccggc acaggtcacg caacttgggt 360

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aagggtcatcg ataccctcac gtgtggcttt gscgacctca tggggtacat acctgtcgtc 420
ggcgccccctg tgggcggcgt tgccagagcc ctgcgcgatg gcgtgcgggt cctggaggac 480
gggataaatt atgcaacagg gaacttgccc ggttgctcct tttctatctt cttgctggct 540
ctcttgtctt gtatcacctg gcccggtgtct gccatacagg ttaagaacaa cagccacttc 600
tacatggcga ctaatgactg tgccaatgac agcatcgtct ggcagctcag ggacgcggtg 660
ctccatgttc ctggatgtgt cccctgtgag aggtcaggta ataggacctt ctggttgaca 720
gcggtctcgc ccaacgtggc tgtgagccga cctgggtgctc tctactagagg tctgcgggct 780
cacattgata ccacgtgat gtccgccacc ctctgctctg ccctatacat aggggacctt 840
tgcggcgctg tgatgatagc agcgcaagtt gccgtcgtct caccgcaata ccatactttt 900
gtccaggaat gcaactgctc catataccca ggccatatca caggacatcg aatggnn 957

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<210> 18
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<400> 18

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Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
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Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20           25           30

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Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala

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35

40

45

Pro Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Asp Arg Arg Ala Thr Gly Lys Ser Trp Gly Arg Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
 100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Xaa Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Ala Ile
 180 185 190

Gln Val Lys Asn Asn Ser His Phe Tyr Met Ala Thr Asn Asp Cys Ala
 195 200 205

Asn Asp Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro
 210 215 220

Gly Cys Val Pro Cys Glu Arg Ser Gly Asn Arg Thr Phe Cys Trp Thr
 225 230 235 240

Ala Val Ser Pro Asn Val Ala Val Ser Arg Pro Gly Ala Leu Thr Arg
 245 250 255

Gly Leu Arg Ala His Ile Asp Thr Ile Val Met Ser Ala Thr Leu Cys
 260 265 270

Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Ile Ala Ala
275 280 285

Gln Val Ala Val Val Ser Pro Gln Tyr His Thr Phe Val Gln Glu Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa
305 310 315

<210> 19
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 19
gacggggtaa attatgcaac agggaaatctg cctgggttgct ctttctctat cttcttggtg 60
gctcttctgt cttgtgtcac cgtgcctgtc tctgccgtgc aggttaagaa caccagtacc 120
atgtacatgg caaccaatga ctgttccaac aacagcatca tctggcaaata gcagggcgcg 180
gtgcttcatg ttcttgatg tgtcccgtgt gagttgcagg gcaataagtc ccggtgctgg 240
ataccggtca ctcccaacgt ggctgtgaac cagcccggcg ccctcactag gggcttgctgg 300
acgcacattg acaccatcgt gatggtcgct acgctctgtt ctgcactcta catcggggac 360
gtgtgtggcg cggatgatg agctgctcag gttgtcattg tctcgccgca acatcacaac 420
ttttcccagg attgcaattg ttccatc 447

<210> 20
<211> 149
<212> PRT
<213> hepatitis C virus

<400> 20

Asp Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala

20

25

30

Val Gln Val Lys Asn Thr Ser Thr Met Tyr Met Ala Thr Asn Asp Cys
 35 40 45

Ser Asn Asn Ser Ile Ile Trp Gln Met Gln Gly Ala Val Leu His Val
 50 55 60

Pro Gly Cys Val Pro Cys Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp
 65 70 75 80

Ile Pro Val Thr Pro Asn Val Ala Val Asn Gln Pro Gly Ala Leu Thr
 85 90 95

Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Met Val Ala Thr Leu
 100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Ala Val Met Ile Ala
 115 120 125

Ala Gln Val Val Ile Val Ser Pro Gln His His Asn Phe Ser Gln Asp
 130 135 140

Cys Asn Cys Ser Ile
 145

<210> 21
 <211> 310
 <212> DNA
 <213> hepatitis C virus

<400> 21
 atgagcacia atcctaaacc tcaaagaaaa accaaaagaa acactaaccg ccgcccacag 60
 gacgttaagt tcccggggcgg tggccagatc gttggcggag tatacttggt gccgcgcagg 120
 ggcccccggt tgggtgtgcg cgcgacgagg aaaacttccg aacgggtccca gccacgtggg 180
 aggcgccagc ccatccctaa agatcggcgc tccactggca aatcctgggg acgtccagga 240
 tacccttggc ccctgtatgg gaacgagggc cttgggtggg caggatggct cttgtcccct 300
 cgaggctctc 310

<210> 22
 <211> 48
 <212> PRT
 <213> hepatitis C virus

<400> 22

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Arg Ser Leu Ala
 20 25 30

Glu Tyr Thr Cys Ala Arg Arg Gly Lys Leu Arg Arg Ser Ser Met Gly
 35 40 45

<210> 23
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 23
 gacgggataa actacgcaac agggaaatctg cccggttgct ctttttctat cttcttgctg 60
 gccttgctat cctgtctcac tgtgccggcg tccgctgtgc aggtcaagaa caccagccac 120
 tcttatatgg tgaccaatga ttgctcaaac agcagcattg tctggcagct taaggatgct 180
 gtgcttcacg tccctggatg tgttccatgt gagaggcacc aaaatcagtc tcgctgctgg 240
 atacctgtga cacccaatgt ggccgtgagc caacctggcg cgctcaccag gggtttgcg 300
 acgcacattg acaccatcgt tgcgtctgct accgtctgct cagctttgta tgtgggcgac 360
 ttctgcggcg cagtgatgtt ggtctctcaa tttttcatga tctccctca gcaccacatc 420
 ttctgccagg attgcaactg ctcgata 447

<210> 24
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<400> 24

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Val Gln Val Lys Asn Thr Ser His Ser Tyr Met Val Thr Asn Asp Cys
35 40 45

Ser Asn Ser Ser Ile Val Trp Gln Leu Lys Asp Ala Val Leu His Val
50 55 60

Pro Gly Cys Val Pro Cys Glu Arg His Gln Asn Gln Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Thr Pro Asn Val Ala Val Ser Gln Pro Gly Ala Leu Thr
85 90 95

Arg Gly Leu Arg Thr His Ile Asp Thr Ile Val Ala Ser Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Phe Cys Gly Ala Val Met Leu Val
115 120 125

Ser Gln Phe Phe Met Ile Ser Pro Gln His His Ile Phe Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 25

<211> 356

<212> DNA

<213> hepatitis C virus

<400> 25

gacgggataa actatgcaac agggaaacctg cctgggttgct ccttttctat cttcttactg

60

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gccctgcttt cttgcatcac cgtgccggtc tctgccgtgc aagttgcgaa ccgcagtggc 120
tcttacatgg tgaccaatga ttgctcgaac agcagcatcg tttggcagct cgaggaggcc 180
gtccttcacg tccctggatg tgttccctgt gagtggaagg acaacacctc ccgctgctgg 240
ataccggtca cccctaacat cgctgtgagc caacctggcg cgcttaccaa gggcctgcgg 300
acacatattg acatcattgt cgcgtccgcc acgttctgct ctgccttgta tgtggg 356

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<210> 26
<211> 118
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (95)..(95)
<223> Xaa represents any amino acid

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<400> 26

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Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1           5           10           15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Ala
          20           25           30

Val Gln Val Ala Asn Arg Ser Gly Ser Tyr Met Val Thr Asn Asp Cys
          35           40           45

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Glu Ala Val Leu His Val
          50           55           60

Pro Gly Cys Val Pro Cys Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp
65           70           75           80

Ile Pro Val Thr Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Xaa Thr
          85           90           95

Lys Gly Leu Arg Thr His Ile Asp Ile Ile Val Ala Ser Ala Thr Phe
          100          105          110

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Cys Ser Ala Leu Tyr Val
115

<210> 27
<211> 310
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (283)..(284)
<223> n represents any nucleotide

<400> 27
atgagcacga atcctaaacc tcaaagaaaa accaaacgta acaccaaccg cgcgcccatg 60
gacgttaagt tcccgggtgg tggccagatc gttggcggag tttacttggt gccgcgcagg 120
ggccccaggt tgggtgtgcg cgcgactcgg aagacttcgg agcggtcgca acctcgtggg 180
agacgccaac ctatcccaa ggcgcgtcga tccgagggaa ggtcctgggc acagccagga 240
tatccatggc ctctttacgg taatgagggg tgcgggtggg cannatggct cttgtcccc 300
cgcggttctc 310

<210> 28
<211> 117
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (95)..(95)
<223> Xaa represents any amino acid

<400> 28

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

20

25

30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Xaa Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
 100 105 110

Arg Arg Arg Ser Arg
 115

<210> 29
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 29
 gacgggatca attttgcaac agggaaacctc cccgggttgct ccttttctat cttcctcttg 60
 gcactcctct cgtgcctgac tgtccccgct tgggcatca actatcgcaa tgtctcgggc 120
 atttactatg tcaccaatga ttgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180
 atcttgacc tcccagggtg cgtgccctgc gtgagagagg ggaatcagtc acgttgctgg 240
 gtagccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg 300
 agtcatgtgg acttgatggg gggggccgcc actgtttgtt cagcccttta catcggggat 360
 ttrtgtggyg gcttgttcct agtcggtcag atgttctctt tccgaccaag gcgccactgg 420
 actactcaag attgcaattg ttccatc 447

<210> 30
 <211> 149

<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (121)..(121)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (123)..(123)
<223> Xaa represents any amino acid

<400> 30

Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Ile Asn Tyr Arg Asn Val Ser Gly Ile Tyr Tyr Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Glu Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Xaa Cys Xaa Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 31
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 31
gacgggatca attatgcaac aggggaacctt cccggttgct ctttttctat cttcctcttg 60
gcactcctct cgtgcctgac tgttcccgtc tccggcatta actaccgcaa cacctcgggc 120
atctaccacg tcaccaatga ctgcccgaac tccgagcatag tttatgaggc cgaccaccac 180
atcttgacac ttccagggtg cgtgccctgc gtgagaactg ggaatcagtc acgttgctgg 240
gtggccctta ctctaccgt cgcagcgcca tacatcggcg caccgcttga gtctctgcgg 300
agtcattgtg atctgatggg gggggctgcc actgtttgct cagcccttta catcggggat 360
ttgtgtggcg gcttgttctt ggttggtcag atgttttctt tccgaccacg acgccactgg 420
actgcccagg attgcaattg ttctatc 447

<210> 32
<211> 149
<212> PRT
<213> hepatitis C virus

<400> 32

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Ala Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 33
<211> 447
<212> DNA
<213> hepatitis C virus

<400> 33
gacgggatta attatgcaac aggggaatctt cccggttgct ccttttctat cttcctcttg 60
gcacttctct cgtgcctgac tgtccccgct tcggccatta actaccacaa cacctcgggc 120
atctatcata tcaccaacga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180
atcttgcac tcccagggtg cgtgccctgc gtgagagtgg ggaatcagtc gagttgctgg 240
gtggccctta cccctacat cgcagcgcca tacatcggcg caccgcttga gtccttgcg 300
agtcatgtgg atctgatggt gggggcgggc actgtctgtt cagcccttta catcggggat 360
ttgtgtggcg gtgcgttctt gggttggtcag atgttctctt tccgaccacg gcgccactgg 420
accaccaag attgcaactg ctccatc 447

<210> 34
<211> 149
<212> PRT

<213> hepatitis C virus

<400> 34

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1 5 10 15

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Ser Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Ile Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 35

<211> 447

<212> DNA

<213> hepatitis C virus

<400> 35

gacgggatca attatgcaac aggggaatatt cccggttgct cyttttctat cttccttytg 60
gcatttctct cgtgtctgac tgtccccgct tgggccacta actatcgcaa cgtctcgggc 120
atctaccatg tcaccaatga ctgcccgaat tcaagcatag tgtatgaggc cgaccatcac 180
atcttagcac ttccaggttg cgtgccctgc gtgagagtgg ggaaccagtc acgctgctgg 240
gtggccctta cccctaccgt cgcagcgcca tacaccgagg cgccgcttga gtcctcgagg 300
agtcatgtgg atctgatggg gggagctgcc actgtttggt cagcccttta catcggggag 360
ttgtgtggcg gcttggtctt ggttggtcag atgttctctt tycagcctcg gcgccactgg 420
actaccagg attgcaattg ttccatc 447

<210> 36
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (120)..(120)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (134)..(134)
<223> Xaa represents any amino acid

<400> 36

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser

1	5	10	15
Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala	20	25	30
Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys	35	40	45
Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu	50	55	60
Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp	65	70	75
Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu	85	90	95
Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val	100	105	110
Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val	115	120	125
Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp	130	135	140
Cys Asn Cys Ser Ile	145		

<210> 37
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 37	
gacgggatta attatgcaac agggaaayctc cccggttgct ctttttctat cttcctcttg	60
gcacttctct cgtgcctgac tgtccccgct tcggccacca actaccgcaa tgtctcgggc	120
attaccatg tcaccaatga ctgcccgaat tcaagcatag tgtttgaggc cgaccatcac	180
atcttgacc ttccaggatg cgtgcctgc gtgaaagagg gaaatcattc acgctgctgg	240

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gtggccctta cccctaccgt cgcagcgcca tacatcggcg cgccacttga gtctctacgg      300
agtcattgtg atgtgatggt gggggctgcc actgtttgtt cagcccttta catcggggat      360
ctgtgcggtg gcttggttct ggttggtcag atgttctctt tccgaccacg gcgccactgg      420
actaccaggg aatgcaattg ttccatc                                          447

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<210> 38
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (9)..(9)
<223> Xaa represents any amino acid

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<400> 38

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Asp Gly Ile Asn Tyr Ala Thr Gly Xaa Leu Pro Gly Cys Ser Phe Ser
1           5           10           15

```

```

Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20           25           30

```

```

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35           40           45

```

```

Pro Asn Ser Ser Ile Val Phe Glu Ala Asp His His Ile Leu His Leu
50           55           60

```

```

Pro Gly Cys Val Pro Cys Val Lys Glu Gly Asn His Ser Arg Cys Trp
65           70           75           80

```

```

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
85           90           95

```

```

Glu Ser Leu Arg Ser His Val Asp Val Met Val Gly Ala Ala Thr Val
100          105          110

```

```

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Leu Phe Leu Val
115          120          125

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Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu
 130 135 140

Cys Asn Cys Ser Ile
 145

<210> 39
 <211> 447
 <212> DNA
 <213> hepatitis C virus

<400> 39
 gacgggatca attatgcaac agggaaacctc cccgggttgct ctttctctat cttcatcctg 60
 gcactttctct cgtgcctgac tgtcccggcc tcggctcagc attatcggaa tgtctcgggc 120
 attaccacg tcaccaacga ctgcccgaac tccagcatag tgtatgagtc cgaccatcac 180
 atcttacacc taccaggggtg tgtaccctgt gtgaagactg ggaacacttc gcgctgctgg 240
 gtggccttaa cacctaccgt ggccgcgccc atactttcgg ctccacttat gtccgtacgg 300
 cggcatgtgg atctgatggg ggggtgcagct accctatcgt ctgccctcta cgttggagac 360
 ctctgcgggg gtgccttcct agtggggcag atgttcacct tccagccgcg tcgccactgg 420
 actgtccaag actgcaactg ttccatc 447

<210> 40
 <211> 149
 <212> PRT
 <213> hepatitis C virus

<400> 40

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
 1 5 10 15

Ile Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
 20 25 30

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys

35	40	45
Pro Asn Ser Ser Ile Val Tyr Glu Ser Asp His His Ile Leu His Leu		
50	55	60
Pro Gly Cys Val Pro Cys Val Lys Thr Gly Asn Thr Ser Arg Cys Trp		
65	70	75 80
Val Ala Leu Thr Pro Thr Val Ala Ala Pro Ile Leu Ser Ala Pro Leu		
	85	90 95
Met Ser Val Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu		
	100	105 110
Ser Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val		
	115	120 125
Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp		
	130	135 140
Cys Asn Cys Ser Ile		
145		

<210> 41
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (383)..(383)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (924)..(924)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (387)..(387)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (928)..(928)
 <223> n represents any nucleotide

<400> 41
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa atactaaccg tcgccctatg 60
 gacgtcaagt tcccggggcgg cggccagatc gttgggtggag tttacttggt gccgcgcagg 120
 ggccctcggt tgggtgtgcg cgcgacgaga aagacctccg aacgggtcca gcctagaggc 180
 aggcgccagc ccataccaaa ggtacgccag ccgacaggcc gtagctgggg tcaaccgggc 240
 tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtcccc 300
 cgcggggtctc gtcctaattg gggccccaac gacccccggc gaagggtccg caacttgggt 360
 aaggtcatcg atacccttac atncggncta gccgacctca tggggtacat ccctgtccta 420
 ggagggccgc ttggcggcgt tgcggctgcc ctggcgcatg gcgttagggc aatcgaggac 480
 ggggtcaatt acgcaacagg gaatcttcct ggttgctcct tttctatctt cctcttagca 540
 ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggata 600
 taccatctta ccaatgactg ctccaacaac agcatcgttt ttgaggcgga gaccatgata 660
 ctgcattctc caggttggtt cccatgtatc aaggcgggga atgagtcacg atgttggtc 720
 cctgtctccc ccaccttagc cgtccccaac tcatcagtgc caatccacgg gtttcgccga 780
 cacgtagacc tcctcgttgg ggcagcgga ttttggtcgg ccatgtacat cggagacctc 840
 tgtggtagca taatcttggg agggcagctt tttactttca ggcctaagta ccatcaggtt 900
 acccaggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 42
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (128)..(129)
 <223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (308)..(308)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (310)..(310)
<223> Xaa represents any amino acid

<400> 42

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa
115 120 125

Xaa Leu Ala Asp Leu Met Gly Tyr Ile Pro Val Leu Gly Gly Pro Leu
130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp

145		150		155		160
Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile						
	165		170		175	
Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ile						
	180		185		190	
Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu Thr Asn Asp Cys Ser						
	195		200		205	
Asn Asn Ser Ile Val Phe Glu Ala Glu Thr Met Ile Leu His Leu Pro						
	210		215		220	
Gly Cys Val Pro Cys Ile Lys Ala Gly Asn Glu Ser Arg Cys Trp Leu						
	225		230		235	240
Pro Val Ser Pro Thr Leu Ala Val Pro Asn Ser Ser Val Pro Ile His						
		245		250		255
Gly Phe Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys						
		260		265		270
Ser Ala Met Tyr Ile Gly Asp Leu Cys Gly Ser Ile Ile Leu Val Gly						
	275		280		285	
Gln Leu Phe Thr Phe Arg Pro Lys Tyr His Gln Val Thr Gln Asp Cys						
	290		295		300	
Asn Cys Ser Xaa Asn Xaa Gly His Val Thr Gly His Arg Met Ala						
	305		310		315	

<210> 43
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (446)..(446)
 <223> n represents any nucleotide

<220>

<221> misc_feature
<222> (467)..(467)
<223> n represents any nucleotide

<220>
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<222> (470)..(470)
<223> n represents any nucleotide

<220>
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<222> (483)..(483)
<223> n represents any nucleotide

<220>
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<223> n represents any nucleotide

<220>
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<222> (513)..(514)
<223> n represents any nucleotide

<220>
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<222> (520)..(520)
<223> n represents any nucleotide

<220>
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<222> (531)..(531)
<223> n represents any nucleotide

<400> 43
atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa acaccatccg ccgcccacag 60
gacgtcaagt tcccgggtgg cggccagatc gttggtggag tctacttgct gccgcgcagg 120
ggcccgcgct tgggtgtgcg cgcgacgaga aagacttctg aacggtccca gccagaggt 180

aggcgccaac caatacccaa agtgcgccac caaacgggcc gtacctgggc ccagcccggg	240
tacccttggc ctctttatgg aaatgagggc tgtggttggg caggctggct cctgtcccc	300
cgcggtcttc gcccaaattg gggcccaaac gacccccggc ggaggtcccg caacttgggt	360
aaagtcacgc acacccttac ttgcggcttc gccgacctca tggggtatat ccctgtcgta	420
ggcgctccgw tgggaggcgt cgcggnngcc ttggcgcatg gggtcanggn catcgaggac	480
gngntaaatt acgcaacagn gaatcttccc ggnngctctn tctctatctt nctcttggca	540
cttctctcgt gccttacaac accagcctcc gcggcgcatc ataccaacaa gtctggcctg	600
taccatctca ccaacgactg cccaacagc agcatcgttt atgaggcgga gacactgatt	660
ttgcacttgc ctgggtgtgt accttgtgtg aagrtgraca atcaatcccg gtgctgggtg	720
caggcctccc cgaccctggc agtgccgaac gcgtctacgc cagtcaccgg gttccgcaaa	780
catgtggaca tcatggtggg cgctgccgcg ttctgttcag ctatgtatgt gggggacctg	840
tgcgggggcc ttttctcgt tggacagctc ttcacgctca ggctcggat gcatcaggtt	900
gtccaggagt gtaactgttc catctacaca gggcatatca ctggacaccg aatggca	957

<210> 44
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
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 <222> (144)..(144)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (149)..(149)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (156)..(157)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE

<222> (161)..(161)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (167)..(167)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (171)..(172)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (174)..(174)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (232)..(233)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (177)..(177)
<223> Xaa represents any amino acid

<400> 44

Met	Ser	Thr	Leu	Pro	Lys	Pro	Gln	Arg	Lys	Thr	Lys	Arg	Asn	Thr	Ile
1				5					10					15	

Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		

Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala
		35					40					45			

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Xaa
130 135 140

Gly Gly Val Ala Xaa Ala Leu Ala His Gly Val Xaa Xaa Ile Glu Asp
145 150 155 160

Xaa Val Asn Tyr Ala Thr Xaa Asn Leu Pro Xaa Xaa Ser Xaa Ser Ile
165 170 175

Xaa Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Ala
180 185 190

His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Xaa Xaa Asn Gln Ser Arg Cys Trp Val
225 230 235 240

Gln Ala Ser Pro Thr Leu Ala Val Pro Asn Ala Ser Thr Pro Val Thr
245 250 255

Gly Phe Arg Lys His Val Asp Ile Met Val Gly Ala Ala Ala Phe Cys
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly

275

280

285

Gln Leu Phe Thr Leu Arg Pro Arg Met His Gln Val Val Gln Glu Cys
 290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
 305 310 315

<210> 45
 <211> 413
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (302)..(302)
 <223> n represents nucleotide

<220>
 <221> misc_feature
 <222> (340)..(340)
 <223> n represents nucleotide

<220>
 <221> misc_feature
 <222> (384)..(384)
 <223> n represents nucleotide

<400> 45
 atgagcacac ttcctaaacc tcaaagaaaa accaaacgaa acaccaaccg tcgcccacag 60
 gacgtcaagt tcccgggtgg cggtcagatc gttggtggag tttacttggt gccgcgcagg 120
 ggccctcggt tgggtgtgcg cgcgacgagg aaaacttctg aacggtccca gcccaggggt 180
 agacgccaac ctataccgaa ggtgcgtcac caaacgggcc gtacctgggc tcaacccggg 240
 taccctggc ctctttatgg gaatgagggt tgtggctggg caggggtggct cctgtccccc 300
 cncggctctc gccctaattg gggccctaata gacccccggn ggaggtcccg caacctgggt 360
 aagggtcatcg atacccttac ttgnnggsttc gccgacctca tagagtacat tcc 413

<210> 46
<211> 137
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (101)..(101)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (114)..(114)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (128)..(129)
<223> Xaa represents any amino acid

<400> 46

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Xaa Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro

	100		105		110										
Arg	Xaa	Arg	Ser	Arg	Asn	Leu	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Xaa
	115					120						125			
Xaa	Phe	Ala	Asp	Leu	Ile	Glu	Tyr	Ile							
	130					135									

<210> 47
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (324)..(324)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (340)..(340)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (455)..(455)
 <223> n represents any nucleotide

<400> 47
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 gatgtcaagt tcccgggacg cggtcagatc gttggtggag tctacttggt accgcgcagg 120
 ggcccacgtt tgggtgtgcg cgcgacgagg aagacttcg aacggtccca ggccagaggt 180
 aggcgccaac caatacccaa ggtgcgccag aaccaaggcc gaacctgggc tcagcctggg 240
 tacccttggc ccctttatgg gaacgagggc tgcggctggg cggggtggct cttgtcccc 300
 cgtggctctc gcccgactg ggncccaat gacccccggn ggaggtcccg caacctgggt 360
 aaggatcatc acaccctcac ttgcggcttc gccgacctca tggagtacat ccctgtcggt 420
 ggcgcccccc ttggaggcgt tgcggcgga ctggnacatg gtgtcagggc catcgaggac 480

gggataaaact atgcaacagg gaatcttcct ggttgctctt tctctatctt ccwcttggca	540
cttctctcgt gcctcaccac gcctgcctcc gcactaaact atgctaacia gtctgggctg	600
tatcatctaa ccaatgactg cccaatagc agcattgtgt atgaggcgaa tggcatgac	660
ctgcatctcc cgggttgctg cccctgcgtg aagaccggca acctgaccaa gtgttggtg	720
tcggcctccc cgacattggc ggtgcagaat gcgtcgggtg ccatcagggg tgtccgcgag	780
cacgtggacc tcttggtggg tgctgctgcg ttctgctctg ccatgtacgt gggcgactta	840
tgcggtgggc tctttctcgt tgggcagttg ttcacgttca gaccaggat gtatgagac	900
gccaggact gcaactgttc catctatgca ggccacatca ctgggcaccg gatggcg	957

<210> 48
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (108)..(108)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (114)..(114)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (152)..(152)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (178)..(178)
 <223> Xaa represents any amino acid

<400> 48

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Ala Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asp Trp Xaa Pro Asn Asp Pro
100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Glu Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Ala Glu Leu Xaa His Gly Val Arg Ala Ile Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Xaa Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu
180 185 190

Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asn Gly Met Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Thr Gly Asn Leu Thr Lys Cys Trp Leu

225	230	235	240
Ser Ala Ser Pro Thr Leu Ala Val Gln Asn Ala Ser Val Ser Ile Arg			
	245	250	255
Gly Val Arg Glu His Val Asp Leu Leu Val Gly Ala Ala Ala Phe Cys			
	260	265	270
Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly			
	275	280	285
Gln Leu Phe Thr Phe Arg Pro Arg Met Tyr Glu Ile Ala Gln Asp Cys			
	290	295	300
Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala			
305	310	315	

<210> 49
 <211> 309
 <212> DNA
 <213> hepatitis C virus

<400> 49	
atgagcacac ttcttaaacc acaaagaaaa accaaaagaa acaccaaccc cggccacagg	60
acgttaagtt cccaggcggc ggtagatcg ttggtggagt ttacgtgcta ccacgcaggg	120
gccccagtt ggggtgtgct gcagtgcgca agacttccga gcggtcgcaa cctcgcagta	180
ggcgccaacc catccccagg gcgcgccgaa ccgagggcag gtcttgggct cagccccggg	240
acccttggcc cctatatggg aatgagggct gcgggtgggc aggggtggctc ctgtccccgc	300
gcggctctc	309

<210> 50
 <211> 115
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (17)..(17)
 <223> Xaa represents any amino acid

<400> 50

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Xaa Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Gln Leu Gly Val Arg Ala
35 40 45

Val Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Ser Arg Arg Gln Pro
50 55 60

Ile Pro Arg Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg
115

<210> 51

<211> 447

<212> DNA

<213> hepatitis C virus

<400> 51

gacggaatta atttcgcaac agggaattta cctgggttgct ctttctctat cttccttctg 60

gctttgttct catgcttgct tacaccaca gccgggctgg agtaccgtaa tgcctccgga 120

ctctacatgg taactaacga ctgcagtaac ggtagtatcg tgtatgaggc cggggatatt 180

atcctccact tacctggctg tgtcccctgc gtacgctctg gcaatacatc aagatgctgg 240

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atccctgtga gcccyaccgt cgccgtgaag tcgccctgcg ccgccaccgc ctctctccgc 300
acgcacgtgg atatgatggg ggggrgcggcc accctatgct cagctctcta cgtaggagac 360
ctttgtggag cgctatttct tgtygggcag gggttctcat ggagacatcg ccagcattgg 420
actgtccagg actgcaactg ttccatc 447

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<210> 52
<211> 149
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (82)..(85)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (108)..(108)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (128)..(128)
<223> Xaa represents any amino acid

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<400> 52

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Asp Gly Ile Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser
1           5           10           15

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Ile Phe Leu Leu Ala Leu Phe Ser Cys Leu Leu Thr Pro Thr Ala Gly
20           25           30

```

```

Leu Glu Tyr Arg Asn Ala Ser Gly Leu Tyr Met Val Thr Asn Asp Cys
35           40           45

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```

Ser Asn Gly Ser Ile Val Tyr Glu Ala Gly Asp Ile Ile Leu His Leu
50           55           60

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Pro Gly Cys Val Pro Cys Val Arg Ser Gly Asn Thr Ser Arg Cys Trp
65 70 75 80

Ile Pro Val Ser Xaa Thr Val Ala Val Lys Ser Pro Cys Ala Ala Thr
85 90 95

Ala Ser Leu Arg Thr His Val Asp Met Met Val Xaa Ala Ala Thr Leu
100 105 110

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ala Leu Phe Leu Xaa
115 120 125

Gly Gln Gly Phe Ser Trp Arg His Arg Gln His Trp Thr Val Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 53
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 53
ctcgacagtt actgagaatg acatccgtgt cgaggaatca atataccaat gttgtgactt 60
ggcccccgag gctcgcaagg ccataaagtc gctcaccgag cggctgtaca tcggggggccc 120
yctaaccaat tcaaaaggac agaactgcgg ctaccgtcgg tgccgcgcca gcggcgtgct 180
gactaccagc tgccggaaca ccctgacatg ctacttgaaa gccagagcgg cctgtcgagc 240
tgcaaagctc cgggactgca ccatgctcgt gtgcggggat gaccttgtcg ttatctgtga 300
gagtgcggga gtcgaggaag acgcggcgaa cctacgagct 340

<210> 54
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (40)..(40)
<223> Xaa represents any amino acid

<400> 54

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Xaa Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
100 105 110

Ala

<210> 55

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 55

ctcgacagtt actgagaacg acatccgtac cgaggratca atctatcaat gttgtgactt	60
ggccccygag gcccgcaagg ccataaagtc gctcaccgag cggctgtacg tcgggggccc	120
cctaaccaat tcaaaggggc agaactgcgg ctatcgtcgg tgtcgcgcta gcggcgtgct	180
gaccaccagc tgcggcaaca ccctcacatg ctacttgaaa gccagggcgg cctgtcgagc	240

tgcaaagctc caggactgca cgatgctcgt gtgcggagac gaccttgtcg ttatctgtga 300
gagcgcggga gtcgaggagg acgcggcgaa cctacgagtc 340

<210> 56
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (12)..(12)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Xaa represents any amino acid

<400> 56

Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Xaa Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Xaa Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
100 105 110

Val

<210> 57
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 57
ctcgacagtt actgagaacg acattcgtgt cgaggaatca atctaccagt gctgtgactt 60
ggcccccgag gcccgcaagg ccataaagtc gctcaccgag cggctgtata tcgggggtcc 120
cctaaccaac tcaaaagggc agaactgcgg ctaccgtcgg tgccgcgccca gcggcgtgct 180
gactaccagc tgcggttaata ccctcacatg ttacttgaaa gccagggcgg cctgtcgagc 240
tgccaagctc caggactgca caatgctcgt gtgcggagac gaccttgtcg ttatctgtga 300
gagtgcrgga gtcgaggagg atgcggcgaa cctacgagtc 340

<210> 58
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (102)..(102)
<223> Xaa represents any amino acid

<400> 58

Ser Thr Val Thr Glu Asn Asp Ile Arg Val Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Arg Ala Ala Cys Arg Ala
 65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Cys Glu Ser Xaa Gly Val Glu Glu Asp Ala Ala Asn Leu Arg
 100 105 110

Val

<210> 59
 <211> 652
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (524)..(524)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (625)..(625)
 <223> n represents any nucleotide

<400> 59
 cgtacagcct ccaggacccc ccctcccggg agagccatag tgggtctgcgg aaccggtgag 60
 tacaccggaa ttgccaggac gaccgggtcc tttcttgat caaccgcctc aatgcctgga 120
 gatttgggcg tgcccccgca agactgctag ccgagtagtg ttgggtcgcg aaaggccttg 180
 tgggtactgcc tgatagggtg cttgcgagtg ccccgggagg tctcgtagac cgtgcaccat 240
 gagcacgaat cctaaacctc aaagaaaaac caaaagaaac accaaccgcc gccacagga 300
 cgtcaagtgc ccgggcggtg gccagatcgt tgggtggagtc tacgtgctac cgcgcagggg 360

ccctagattg ggtgtgcgcg cagcgcggaa gacttcggag cggtcgcaac ctctgtgggag 420
 ggcgcaacct attcccaagg agcgccgacc cgagggcagg tcctgggcgc agcccgggta 480
 cccctggccc ctctatggta acgagggctg cgggtgggca ggtnggctcc tgtcccctcg 540
 cggctcccggt cctagttggg gtcctactga cccccggcgt aggtcacgca atttgggtaa 600
 ggtcatcgat accctcacgt gttgnttcgc cgacctcatg gggtagatac cg 652

<210> 60
 <211> 138
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (96)..(96)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (129)..(129)
 <223> Xaa represents any amino acid

<400> 60

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Ala Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Xaa
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Xaa Phe Ala Asp Leu Met Gly Tyr Ile Pro
130 135

<210> 61
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 61
ctcaacggtc actgaagctg atatccgaac agaggagtcc atataccaat gctgtgacct 60
gcaccccgaa gcacgtgtag ccatcaagtc tttgactgaa aggctgtacg tcggggggcc 120
cttgaccaat tcaaaagggg agaactgcgg ctatcgcaga tgccgtgcca gcggcgctctt 180
gacaaccagc tgccggcaaca ccctcacctg ctatatcaag gccctagcag cctgtagagc 240
tgccaagctc caggactgca ccatgctcgt ctgtggcgac gacctggctg tgatctgcga 300
gagtgtaggg acccaggagg atgcggcgag cctgcgagcc 340

<210> 62
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 62

Ser Thr Val Thr Glu Ala Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu His Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Glu Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Val Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg
100 105 110

Ala

<210> 63
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
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<223> n represents any nucleotide

<220>
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<220>
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<222> (316)..(316)
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<220>
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<222> (330)..(340)
<223> n represents any nucleotide

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<400> 63
ntcaacagtc actgagagtg atatccgtac agaggagtcc atctaccaat gctgtgatct      60
agacccccgag gctcgcaagg ccataaggtc cctcacagag aggctttata tcgggggtcc      120
cctgacaaac tcaaaagggc agaactgcgg ctaccgccga tgccgtgcaa gcggcgctcct      180
gacgactagc tgccggaaca ccctcacctg ttacataaag gccagggcag cctgtcgagc      240
tgccaagctc caggattgct caatgctcgt ctgtggcgac gaccttgtcg ttatctgcga      300
gatcgagggg ntccangagg atccgtcgan nnnnnnnnnn                               340

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<210> 64
<211> 113
<212> PRT
<213> hepatitis C virus

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<220>
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<223> Xaa represents any amino acid

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<220>
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<222> (110)..(113)
<223> Xaa represents any amino acid

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<400> 64

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Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1           5           10           15

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Cys Cys Asp Leu Asp Pro Glu Ala Arg Lys Ala Ile Arg Ser Leu Thr
          20           25           30

```

```

Glu Arg Leu Tyr Ile Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
          35           40           45

```

```

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys

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50		55		60
Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala				
65		70	75	80
Ala Lys Leu Gln Asp Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val				
	85	90		95
Val Ile Cys Glu Ile Glu Gly Xaa Xaa Glu Asp Pro Ser Xaa Xaa Xaa				
	100	105		110

Xaa

<210> 65
 <211> 831
 <212> DNA
 <213> hepatitis C virus

<220>
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 <223> n represents any nucleotide

<400> 65	
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aaccgccgcc cacaggacgt caagttcccg ggcggtggcc agatcgtcgg tggagtttac	120
ctgttgccgc gcaggggccc tagattgggt gtgcgcgcga ctaggaagac ttccgagcgg	180
tcgcaacctc gtgggaggcg acagcctatc cccaaggctc gccgatccga gggcaggtcc	240
tgggctcagc ccgggtaccc ttggcccctc tatggcaatg agggcatggg ttgggcaggg	300
tggctcctgt ccccccattg ctcccggcct agttggggcc cttcagacct ccggcgtagg	360
tcgcgtaatt tgggtaaggc catcgatacc ctcacatgcg gcttcgccga cctcatgggg	420
tacattccgc tcgtcggcgc ccccttaggg ggcgttgcca gggccctggc gcaaggcttc	480
cgggatctac cacgtcacca acgattgttc caatgggagc attgtgtatg aggcggaagg	540
catgatcatg catctccccg ggtgcgtgcc ctgcgttcgg gaaggtaata tctctcgttg	600
ctgggtaccg ttttccccca cgctcgcagc caggaatgct agcgtcccca ctcaggcaat	660

tcggcgacac gtcgacttgc ttgttggggc ggccacactc tgttctgcta tgtatgtggg 720
ggacctctgt ggggtccgtct tctctgctcg ccaactgttc accttcacaw cccgccagna 780
ctacacagtg caagactgca attgttccat ctaccccggc catataacgg g 831

<210> 66
<211> 158
<212> PRT
<213> hepatitis C virus

<400> 66

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Ile Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro His Gly Ser Arg Pro Ser Trp Gly Pro Ser Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala Gln Gly Phe Arg Asp Leu
145 150 155

<210> 67
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(7)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (334)..(340)
<223> n represents any nucleotide

<400> 67
nnnnnnngtc actgagagtg atatccgtgt cgaggartca attaccaat gctgtgacct 60
ggcccccgag gctcgcgtag ccataaagtc gctcactgag cggctatatg tcggggggccc 120
tctcaccaac tcaaaaggac agaactgcgg ctatcgccgg tgccgtgcga gcggtgtgct 180
gactactagc tgcggttaaca ccctcacatg ctacctgaaa gccgccgcgg cctgtcgagc 240
tgcaaagctc cggaatgca caatgctcgt gtgtggcgac gacctcgtcg ttatctgtga 300
gagtgcgggg gtccaggagg atgctgcaag cctnnnnnnn 340

<210> 68
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
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<222> (1)..(2)
<223> Xaa represents any amino acid

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<222> (12)..(12)
<223> Xaa represents any amino acid

<220>
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 <222> (111)..(113)
 <223> Xaa represents any amino acid

<400> 68

Xaa Xaa Val Thr Glu Ser Asp Ile Arg Val Glu Xaa Ser Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Val Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ala Ala Ala Cys Arg Ala
 65 70 75 80

Ala Lys Leu Arg Glu Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Xaa Xaa
 100 105 110

Xaa

<210> 69
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (28)..(28)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (336)..(340)
 <223> n represents any nucleotide

<400> 69
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 acccgagcag gccagaactg ccatacactc attgactgag agactctacg taggagggcc 120
 catgatgaac agcaaagggc aatcctgcgg atacagggcat tgccgcgcca gcggagtgct 180
 caccaccagt atggggaata ccatcacgtg ctacatcaag gccctagcgg cttgttaaagc 240
 agcaggaata gtggccccca ccatgctggt gtgcggcgat gacctagttg tcatctcaga 300
 gagtcagggg gtcgaggagg acgaccggaa cctgannnnn 340

<210> 70
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
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 <222> (9)..(9)
 <223> Xaa represents any amino acid

<220>
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 <222> (112)..(113)
 <223> Xaa represents any amino acid

<400> 70
 Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu Glu Ser Ile Tyr Gln
 1 5 10 15
 Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
 35 40 45

Cys Gly Tyr Arg His Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala
 65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Gln Gly Val Glu Glu Asp Asp Arg Asn Leu Xaa
 100 105 110

Xaa

<210> 71
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 71
 ctcaaccgtc acagagaggg atataagaac tgaggagtcc atatacctgg cctgctcctt 60
 acccgagcag gcccggactg ccatacatc attaactgag agactttacg tgggagggcc 120
 catgatgaac agcaaagggc agtcctgcgg atacaggcgt tgccgcgcta gcggagtgc 180
 caccaccagt atggggaaca ccatcacgtg ttatgtgaaa gccctcgcag cttgtaaagc 240
 tgcgggcatt gttgccccca cgatgctggt gtgcggcgat gacctggttg tcatctcaga 300
 gagtcagggg gctgaggagg acgagcgaaa cctgagagtc 340

<210> 72
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 72

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Ala Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Val

<210> 73

<211> 340

<212> DNA

<213> hepatitis C virus

<400> 73

ctcaacagtc gcggagagag acatcaggac cgaggagtcc atttaccttg cctgctcctt 60

acccgagcaa gcccgaactg ccatacattc attgactgag agactttacg taggagggcc 120

catgatgaac agcaagggac agtcctgcgg ttacagacgt tgccgcgcca gcggagtgc 180

caccaccagc atgggggaata ccatcacatg ctatgtgaag gcattagctg cctgcaaagc 240

tgcaggcatc gttgctccca cgatgctggt ttgtggcgac gatctggtca tcatctcaga 300

gagtcaggga accgaggagg atgagcggaa cctgagagtc 340

<210> 74
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 74

Ser Thr Val Ala Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ile Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Val

<210> 75
<211> 1195
<212> DNA
<213> hepatitis C virus

<220>
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<223> n represents any nucleotide

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<222> (7)..(7)
<223> n represents any nucleotide

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<223> n represents any nucleotide

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<223> n represents any nucleotide

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<223> n represents any nucleotide

<220>
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<222> (371)..(371)
<223> n represents any nucleotide

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<222> (374)..(374)
<223> n represents any nucleotide

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<222> (387)..(387)
<223> n represents any nucleotide

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<223> n represents any nucleotide

<220>

<221> misc_feature
<222> (446)..(446)
<223> n represents any nucleotide

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<223> n represents any nucleotide

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<222> (629)..(629)
<223> n represents any nucleotide

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<223> n represents any nucleotide

<220>
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<222> (890)..(891)
<223> n represents any nucleotide

<220>
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<222> (978)..(978)
<223> n represents any nucleotide

<220>
<221> misc_feature

<222> (1194)..(1194)
<223> n represents any nucleotide

<220>
<221> misc_feature
<222> (673)..(673)
<223> n represents any nucleotide

<400> 75
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tacaccggaa ttgccgggaa gactgggtcc tttcttggat aaaccactc tatgcccggc 120
catttgggcg tgcccccgca agactgctar ccgagtagcg ttgggttgcg aaaggccttg 180
tgggtactgcc tgataggggtg cttgcgagtg ccccgggagg tctcgtagac cgtgcatcat 240
gagcacaaat cctaaacctc aaagaaaaac caaaagaaac actaaccgcc gccacagga 300
cgttaagttc ccgggcggtg gccagatcgt tggcggagta tacttgttgc cntgcagggg 360
nccaggtng ngtnatgcg caacgangaa gactnccgaa cagtcccagc cacgtgggag 420
gcgccagccc atcccgaaag atcgngcac cactggcaag tcctggggac gtccaggata 480
tccttgcccc ctgtatggga acgagggcct cgggtgggca ggggtggctcc tgtcccccg 540
gggctccgc ccgtcatggg gcccacagga ccccggcat aggtcgcgca acttgggtaa 600
ggtcacgat accctcacgt ncggctttnc cgacctcatg gggtagattc ccgtcgttgg 660
cgccccagta ggnggcgtcg ccagagctct cgcgcatggc gtgagagtcc tggaggacgg 720
gataaactat gaaacaggga acctccccgg ttgctctttc tctatctccc tccttgctct 780
tctgtcctga attaccngc cagtttctgc tgtggaaatc aaaaacacca gmaacacata 840
catggtgact aacgactgtt caaacagyag catcacctgg cagcttnngn ncgcggtgct 900
tcacgttcct ggatgcgtcc cctgtgaacg agagggcaac agttcccggg gctggattcc 960
agtcacgccc racgtakncg tgagccgacc tgggtgcccta accgaggggt tgcgatcgca 1020
catcgacacc atcgtagcgt ccgcaacatt ttgttctgcc ctctacatag gggatgtatg 1080
tggcgcgata atgatagctg cccaagtggg catcgtctcg ccggagcatc atcactttgt 1140
ccaggactgt aactgttcca tctaccggg ccacataacg gggcctcgta tgtng 1195

<210> 76
<211> 318
<212> PRT
<213> hepatitis C virus

<220>
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<222> (38)..(38)
<223> Xaa represents any amino acid

<220>
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<222> (41)..(41)
<223> Xaa represents any amino acid

<220>
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<222> (44)..(44)
<223> Xaa represents any amino acid

<220>
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<222> (44)..(46)
<223> Xaa represents any amino acid

<220>
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<222> (50)..(50)
<223> Xaa represents any amino acid

<220>
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<222> (53)..(53)
<223> Xaa represents any amino acid

<220>
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<222> (70)..(70)
<223> Xaa represents any amino acid

<220>
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<222> (128)..(128)
<223> Xaa represents any amino acid

<220>
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<222> (131)..(131)
<223> Xaa represents any amino acid

<220>
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<223> Xaa represents any amino acid

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<223> Xaa represents any amino acid

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<222> (197)..(197)
<223> Xaa represents any amino acid

<220>
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<222> (209)..(209)
<223> Xaa represents any amino acid

<220>
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<222> (216)..(217)
<223> Xaa represents any amino acid

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<221> MISC_FEATURE
<222> (244)..(244)
<223> Xaa represents any amino acid

<220>
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<222> (246)..(246)

<223> Xaa represents any amino acid

<220>

<221> MISC_FEATURE

<222> (318)..(318)

<223> Xaa represents any amino acid

<400> 76

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Xaa Cys Arg Xaa Pro Arg Xaa Xaa Xaa Cys Ala
35 40 45

Thr Xaa Lys Thr Xaa Glu Gln Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Xaa Thr Thr Gly Lys Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Xaa
115 120 125

Gly Phe Xaa Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Xaa Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Glu Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile

	165		170		175										
Ser	Leu	Leu	Ala	Leu	Leu	Ser	Ile	Thr	Xaa	Pro	Val	Ser	Ala	Val	Glu
			180					185					190		
Ile	Lys	Asn	Thr	Xaa	Asn	Thr	Tyr	Met	Val	Thr	Asn	Asp	Cys	Ser	Asn
		195					200					205			
Xaa	Ser	Ile	Thr	Trp	Gln	Leu	Xaa	Xaa	Ala	Val	Leu	His	Val	Pro	Gly
	210					215					220				
Cys	Val	Pro	Cys	Glu	Arg	Glu	Gly	Asn	Ser	Ser	Arg	Cys	Trp	Ile	Pro
225					230					235					240
Val	Thr	Pro	Xaa	Val	Xaa	Val	Ser	Arg	Pro	Gly	Ala	Leu	Thr	Glu	Gly
				245					250					255	
Leu	Arg	Ser	His	Ile	Asp	Thr	Ile	Val	Ala	Ser	Ala	Thr	Phe	Cys	Ser
			260					265					270		
Ala	Leu	Tyr	Ile	Gly	Asp	Val	Cys	Gly	Ala	Ile	Met	Ile	Ala	Ala	Gln
	275						280					285			
Val	Val	Ile	Val	Ser	Pro	Glu	His	His	His	Phe	Val	Gln	Asp	Cys	Asn
	290					295					300				
Cys	Ser	Ile	Tyr	Pro	Gly	His	Ile	Thr	Gly	Pro	Arg	Met	Xaa		
305					310					315					

<210> 77
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 77	
atccacagtc actgaaagag acatcagagt tgaagagtcc gtttatctgt cctgttcact	60
ttcccgaggag gcccgagctg ccatacactc actaactgag aggctgtacg tgggaggtcc	120
catgcagaac agcaaggggc aatcctgcgg atacaggcgc tgccgcgcca gcggggtgct	180
caccactagc atggggaata ctctcacatg ctacttgaag gcccgaggcg cctgcagggc	240

cgcggggcatt gttgcaccca caatgctggt gtgtggcgac gacctgggtcg tcatctcaga 300
gagtcagggg actgagaggg acgagaacaa cctgagacct 340

<210> 78
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 78

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Ser Val Tyr Leu
1 5 10 15

Ser Cys Ser Leu Pro Glu Glu Ala Arg Ala Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Gln Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
65 70 75 80

Ala Gly Ile Val Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Arg Asp Glu Asn Asn Leu Arg
100 105 110

Pro

<210> 79
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 79
 ctcaacagtc acggagaggg acatcaggaa tgaggagtcc atattcctgg cctgctcggt 60
 gcccgaggag gcccggactg tcatacatte gctcactgag agactctaca taggcggggcc 120
 gatgatgaac agcaaaggcc agtcctgtgg atacaggcgt tgtcgcgccca gcggggtggt 180
 caccactagc atgggcaata ccatcacgtg ctatgtgaaa gccatggcag cttgcagagc 240
 tgccgggatt gacgccccca caatgttggt atgtggcgac gacctggtgg tcatctcaga 300
 gagtcagggg accgaggagg acgagcgaaa tctgagagtc 340

<210> 80
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 80

Ser Thr Val Thr Glu Arg Asp Ile Arg Asn Glu Glu Ser Ile Phe Leu
 1 5 10 15

Ala Cys Ser Leu Pro Glu Glu Ala Arg Thr Val Ile His Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Met Met Asn Ser Lys Gly Gln Ser
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Met Ala Ala Cys Arg Ala
 65 70 75 80

Ala Gly Ile Asp Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
 100 105 110

Val

<210> 81
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 81
 ctcttgactc tactgtcact gaacaggata tcagggtaga agaagaaata taccaatggt 60
 gtgaccttga gccggaggct agacgggcaa tcaaatacgct cacggaacgg ctttacgttg 120
 gaggtcccat gttcaacagc aaggggctca aatgcggata tcgccgttgc cgtgctagcg 180
 gtgtattgcc cactagctac ggtaatacaa tcacctgcta catcaaggcc agagcggctg 240
 ctcgagctgc gggccttcaa gacccatcat tccttgtctg cggagatgat ttggtggtag 300
 tggctgagag ttgcgkcggt gatgaggagg atagggcagc 340

<210> 82
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (103)..(103)
 <223> Xaa represents any amino acid

<400> 82

Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Leu Lys
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Tyr
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Arg Ala Ala Ala Arg Ala
65 70 75 80

Ala Gly Leu Gln Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Val Ala Glu Ser Cys Xaa Val Asp Glu Glu Asp Arg Ala Ala Leu
100 105 110

Arg

<210> 83
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (336)..(336)
<223> n represents any nucleotide

<400> 83
ctccactgta accgaaaagg acatcaggcc cgaggaagag gtctatcagt gttgtgacct 60
ggagcccgaa gctcgcaagg ttattaccgc cctcacagaa agactctacg tgggcggccc 120
catgcacaac agcaagggag acctttgtgg gtatcggaga tgccgcgcaa gcggcgtcta 180
cacgaccagc ttcggaaca cactgacgtg ctacctcaa gcctcagctg ctattagagc 240
ggcagggctg agagactgca ccatgctggt ttgcggtgac gacttggtcg tcatcgctga 300
gagcgatggc gtagaggagg ataaccgagc cctccnagcc 340

<210> 84
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (112)..(112)
<223> Xaa represents any amino acid

<220>
 <221> misc_feature
 <223> Xaa represents any amino acid

<400> 84

Ser Thr Val Thr Glu Lys Asp Ile Arg Pro Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
 65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Asn Arg Ala Leu Xaa
 100 105 110

Ala

<210> 85
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 85
 ctccacggtg actgaaaagg acatcagggt cgaggaagag atctatcaat gttgtgacct 60

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ggarcccgaa gcccgcaaag caatatccgc cctcacagag agrctctact tgggcggccc      120
catgtataac agcaaagggg agctctgcgg gtatcggagg tgccgcgcga gcggagtgt      180
caccacaagt ttcgggaaca cagtgcctg ctatcttaag gccaccgcag ctaccagggc      240
tgcaggccta aaagactgca ccatgctggt ctgcggtgac gacttggtcg tcatcgccga      300
gagcgagggc gtagaggagg attcccaacc cctccgagcc      340

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<210> 86
<211> 113
<212> PRT
<213> hepatitis C virus

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<220>
<221> MISC_FEATURE
<222> (21)..(21)
<223> Xaa represents any amino acid

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<220>
<221> MISC_FEATURE
<222> (34)..(34)
<223> Xaa represents any amino acid

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<400> 86

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Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1          5          10          15

```

```

Cys Cys Asp Leu Xaa Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
          20          25          30

```

```

Glu Xaa Leu Tyr Leu Gly Gly Pro Met Tyr Asn Ser Lys Gly Glu Leu
          35          40          45

```

```

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
          50          55          60

```

```

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65          70          75          80

```

```

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val

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85

90

95

Val Ile Ala Glu Ser Glu Gly Val Glu Glu Asp Ser Gln Pro Leu Arg
 100 105 110

Ala

<210> 87
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 87
 ctccaccgta accgaaaggg acatcagggg cgaggaggag gtctatcagt gttgtgatct 60
 ggagccagag gcccgcaagg caatatccgc cctcacggag agactctatg tgggcgggtcc 120
 catgtttaac agcaagggag acctatgtgg ctaccgcagg tgccgcgcaa gcggcgtcta 180
 caccaccagc ttcggaaaca cactgacctg ctacctcaag gccacggccg ctaccagagc 240
 ggccggcctg aaggattgca caatgctggg ttgcggggac gacctggtcg tcatcgcaga 300
 gagcgatggc gtggacgagg accgccgagc cctccaagct 340

<210> 88
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 88

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Asp Gly Val Asp Glu Asp Arg Arg Ala Leu Gln
 100 105 110

Ala

<210> 89
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<220>
 <221> misc_feature
 <222> (111)..(111)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (126)..(126)
 <223> n represents any nucleotide

<400> 89
 ctcaacagtc acagagcgcg atgtccagac ggagcatgac atctaccagt gctgtaagtt 60
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 catgtntaac tctaaaggctc aggcatgtgg ataccgtagg tgcagggcca gtggcgtctt 180
 gaccaccatc ctggccaata ctctgacttg ctacttgaaa gctcaggcgg catgcagagc 240
 tgccgggctg aaggactttg acatgttggt ctgcggagac gaccttgtcg ttatttcgga 300
 gagtttgggg gtctcggagg aactagtgct actgcgagct 340

<210> 90
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (37)..(37)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (42)..(42)
<223> Xaa represents any amino acid

<400> 90

Ser Thr Val Thr Glu Arg Asp Val Gln Thr Glu His Asp Ile Tyr Gln
1 5 10 15

Cys Cys Lys Leu Glu Pro Ala Ala Arg Thr Ala Ile Thr Ser Leu Thr
20 25 30

Asp Arg Leu Tyr Xaa Gly Gly Pro Met Xaa Asn Ser Lys Gly Gln Ala
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ile Leu
50 55 60

Ala Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Leu Gly Val Ser Glu Asp Thr Ser Ala Leu Arg
100 105 110

Ala

<210> 91
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 91
 ctcgacagtc accgagcgcg acatccrcac cgagcacgac atctaccaat gctgccaaact 60
 tgacccggtg gcacgcaagg ctattacatc tctgactgag cggctgtact gcggwggggcc 120
 catgatgaac tcccgtggtc aatcatgtgg ataccgtagg tgccgagcca gtggcgtgct 180
 caccacgagc ttgggcaata ccctaacatg ctatttgaaa gcacaagcag cgtgtagggc 240
 agcaaagctc aaaaactatg acatgttagt ctgcggagac gatctagtcg ttatcgcgga 300
 gagtggagga gtctctgagg atgttgacgc cctgcgagca 340

<210> 92
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (9)..(9)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (38)..(38)
 <223> Xaa represents any amino acid

<400> 92

Ser Thr Val Thr Glu Arg Asp Ile Xaa Thr Glu His Asp Ile Tyr Gln
 1 5 10 15

Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Cys Xaa Gly Pro Met Met Asn Ser Arg Gly Gln Ser

35 40 45
 Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Leu
 50 55 60
 Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
 65 70 75 80
 Ala Lys Leu Lys Asn Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95
 Val Ile Ala Glu Ser Gly Gly Val Ser Glu Asp Val Asp Ala Leu Arg
 100 105 110

Ala

<210> 93
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 93
 ctctccgctc acggagcgtg acatccgcac tgaacacgac atctatcagt gctgcccaatt 60
 agatccggtg gcacggaaag ccattacatc tcttactgag cggctgtact gcggcggccc 120
 catgtacaac tctcgaggctc agtcatgtgg gtaccgcagg tgccgggcta gtggtgtctt 180
 caccacaagc ttgggcaaca ccatgacatg ctacctgaag gctcaggcgg cttgtagggc 240
 agcraagctc aaaaactttg acatgttggg ctgcggagac gacctagtcg ttattgctga 300
 gagcggagga gtccttgagg atgccggggc cctgcgagtc 340

<210> 94
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (81)..(81)
 <223> Xaa represents any amino acid

<400> 94

Ser Ser Val Thr Glu Arg Asp Ile Arg Thr Glu His Asp Ile Tyr Gln
1 5 10 15

Cys Cys Gln Leu Asp Pro Val Ala Arg Lys Ala Ile Thr Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Arg Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Gln Ala Ala Cys Arg Ala
65 70 75 80

Xaa Lys Leu Lys Asn Phe Asp Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Pro Glu Asp Ala Gly Ala Leu Arg
100 105 110

Val

<210> 95

<211> 340

<212> DNA

<213> hepatitis C virus

<220>

<221> misc_feature

<222> (36)..(36)

<223> n represents any nucleotide

<400> 95

atccacagtc acggggcgcg acatacgcac agaacnagac atttacctgt cctgccagct

60

cgacccagag gcccggaag ccataaagtc tctcactgag aggctctatg tcggggggccc 120
 tatgtacaac tcaaagggcc aactctgtgg tcaacgccga tgccgagcaa gcgagagtact 180
 ccccaagaag atgggtaaca ccatcacatg cttcctgaag gcaaccgccg cttgccgagc 240
 agccggcttt acagattatg acatgttggt ctgcggagac gatttggttg tcgtaactga 300
 gaggctgga gtcaacgagg atatcgctaa cctgcgagcc 340

<210> 96
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (12)..(12)
 <223> Xaa represents any amino acid

<400> 96

Ser Thr Val Thr Gly Arg Asp Ile Arg Thr Glu Xaa Asp Ile Tyr Leu
 1 5 10 15

Ser Cys Gln Leu Asp Pro Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Leu
 35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Met
 50 55 60

Gly Asn Thr Ile Thr Cys Phe Leu Lys Ala Thr Ala Ala Cys Arg Ala
 65 70 75 80

Ala Gly Phe Thr Asp Tyr Asp Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Val Thr Glu Ser Ala Gly Val Asn Glu Asp Ile Ala Asn Leu Arg
 100 105 110

Ala

<210> 97
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 97
ctccactgtc actgagcagg acatcagggt agaactttcc atctttcagg cctgtgacct 60
caaggacgag gctaggaggg tgataacttc actcacggag cggctttact gtggtgggtcc 120
tatgttcaac agcaagggac aacactgcgg ttaccgccgc tgccgtgcta gtgggggtgct 180
accaccagc ttcggaaca caatcacctg ttacatcaaa gcaaaggcag ctaccaaagc 240
tgccggaatt aaaaatccat cattccttgt ctgcggagat gacttggtcg tgattgctga 300
gagtgcaggg atcgatgagg acaagagcgc cttgagagct 340

<210> 98
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 98
Ser Thr Val Thr Glu Gln Asp Ile Arg Val Glu Leu Ser Ile Phe Gln
1 5 10 15
Ala Cys Asp Leu Lys Asp Glu Ala Arg Arg Val Ile Thr Ser Leu Thr
20 25 30
Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly Gln His
35 40 45
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe
50 55 60
Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Thr Lys Ala
65 70 75 80

Ala Gly Ile Lys Asn Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Ala Gly Ile Asp Glu Asp Lys Ser Ala Leu Arg
100 105 110

Ala

<210> 99
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 99
ctctaccgtc acagagaggg acatacggac agaagaatcc atctatctgt cttgtcaatt 60
gcctgaagag gcccggaag ccattaaatc gctgacagag agactatacg tgggcggccc 120
gatggaaaac agcaagggcc aggcttgagg atataggcgt tgccgcgcaa gcgggggtatt 180
caccacaagc ttgggggaaca ccatgacttg ttacatcaaa gctaaagcgg cttgttaaagc 240
cgctggcatt gtagaccggt tgatgctcgt gtgcggtgac gacctagtgg tcatctcaga 300
aagcaagggg gtggaggagg accagcggga cctacgagtc 340

<210> 100
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 100

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ser Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala

35

40

45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
 50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala
 65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg
 100 105 110

Val

<210> 101
 <211> 335
 <212> DNA
 <213> hepatitis C virus

<400> 101
 ctccactgtc actgagagag acatacggac agaagaatcc atctayytgg cttgtcaatt 60
 gcccgaaagag gcccggaagg ccattaaatc actgacagag agactatacg tgggcggccc 120
 gatggaaaac agcaaaggcc aggccctgcgg atataggcgt tgccgcgcaa gcgggggtatt 180
 caccacaagc ttggggaaca ccatgacttg ttacatcaag gcccaargcag cttgtaaagc 240
 ygctggcatt gttgacccgg tgatgctcgt gtgcggcgac gacctagtgg tcatctcaga 300
 gagcaagggg gtagaggagg accagcgaga cctac 335

<210> 102
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<220>
 <221> MISC_FEATURE
 <222> (15)..(16)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (75)..(75)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (80)..(80)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (112)..(113)
 <223> Xaa represents any amino acid

<400> 102

Ser	Thr	Val	Thr	Glu	Arg	Asp	Ile	Arg	Thr	Glu	Glu	Ser	Ile	Xaa	Xaa
1				5				10						15	

Ala	Cys	Gln	Leu	Pro	Glu	Glu	Ala	Arg	Lys	Ala	Ile	Lys	Ser	Leu	Thr
		20						25					30		

Glu	Arg	Leu	Tyr	Val	Gly	Gly	Pro	Met	Glu	Asn	Ser	Lys	Gly	Gln	Ala
		35					40					45			

Cys	Gly	Tyr	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Leu
	50					55					60				

Gly	Asn	Thr	Met	Thr	Cys	Tyr	Ile	Lys	Ala	Xaa	Ala	Ala	Cys	Lys	Xaa
65					70					75				80	

Ala	Gly	Ile	Val	Asp	Pro	Val	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
			85					90						95	

Val	Ile	Ser	Glu	Ser	Lys	Gly	Val	Glu	Glu	Asp	Gln	Arg	Asp	Leu	Xaa
		100						105					110		

Xaa

<210> 103
 <211> 461
 <212> DNA
 <213> hepatitis C virus

<400> 103
 cgtacagcct ccaggacccc ccctcccgagg agagccatag tggctctgcgg aaccgggtgag 60
 tacaccggaa ttgccgggaa gactgggtcc tttcttggat taaccactc tatgcccgga 120
 gatttgggag tgcccccgca agactgctag ccgagtagcg ttgggttgcg aaaggccttg 180
 tgggtactgcc tgataggggtg cttgcgagtg ccccgaggagg tctcgtagac cgtgcaccat 240
 gagcacgaat cctaaacctc aaagacaaac caaaagaaac accaaccgcc gccacagga 300
 cgtaaagttc ccgggagggtg gccagatcgt tggcgagggtg tacttggtgc cgcgcagggg 360
 cccagagtg ggtgtgcgag cgacgagaaa gacctcgag cggtcccagc cgcgtgggag 420
 gcgccaacct atccccaagg ttaggcgcac caccggccgt t 461

<210> 104
 <211> 74
 <212> PRT
 <213> hepatitis C virus

<400> 104

Met	Ser	Thr	Asn	Pro	Lys	Pro	Gln	Arg	Gln	Thr	Lys	Arg	Asn	Thr	Asn
1				5					10					15	
Arg	Arg	Pro	Gln	Asp	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly
			20					25					30		
Gly	Val	Tyr	Leu	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Val	Gly	Val	Arg	Ala
		35					40					45			
Thr	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Gly	Arg	Arg	Gln	Pro
		50				55					60				

Ile Pro Lys Val Arg Arg Thr Thr Gly Arg
65 70

<210> 105
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (338)..(338)
<223> n represents any nucleotide

/

<400> 105
ctctactgtc acagagaggg atatacgaac agaggaatcc atytatctgg cttgtcaatt 60
gcccggaagag gcccggaagg ccatcaaadc actgacagag agactatacg tgggcggccc 120
gatggaaaac agcaagggcc aggctgcgg atacaggcgt tgccgcgcaa gcgggggtatt 180
caccacaagc ttggggaaca ccatgacttg ttacatcaaa gcccaaggcgg cttgtaaagc 240
cgctggcatt gttgaccag tgatgctcgt gtgcggcgac gacctagtgg tcatctcaga 300
aagcaagggg gtggaggagg accaacgaga cctacgantc 340

<210> 106
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (113)..(113)
<223> Xaa represents any amino acid

<400> 106

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Xaa Tyr Leu
1 5 10 15

Ala Cys Gln Leu Pro Glu Glu Ala Arg Lys Ala Ile Lys Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Glu Asn Ser Lys Gly Gln Ala
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Leu
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Lys Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Lys Gly Val Glu Glu Asp Gln Arg Asp Leu Arg
100 105 110

Xaa

<210> 107

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 107

Ala Arg Gln Ser Asp Gly Arg Ser Trp Ala Gln
1 5 10

<210> 108

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 108

Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 109

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 109

Glu Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 110

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 110

Ala Arg Arg Pro Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 111

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 111

Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg
1 5 10

<210> 112

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 112

Asp Arg Arg Ala Thr Gly Arg Ser Trp Gly Arg
1 5 10

<210> 113

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 113

Asp Arg Arg Ala Thr Gly Lys Ser Trp Gly Arg
1 5 10

<210> 114

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 114

Val Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln
1 5 10

<210> 115

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 115

Val Arg His Gln Thr Gly Arg Thr Trp Ala Gln
1 5 10

<210> 116

<211> 11
<212> PRT
<213> hepatitis C virus

<400> 116

Val Arg Gln Asn Gln Gly Arg Thr Trp Ala Gln
1 5 10

<210> 117
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 117

Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln
1 5 10

<210> 118
<211> 11
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (8)..(11)
<223> Xaa represents any amino acid

<400> 118

Val Arg Arg Thr Thr Gly Arg Xaa Xaa Xaa Xaa
1 5 10

<210> 119
<211> 11
<212> PRT
<213> hepatitis C virus

<400> 119

Val Arg Arg Thr Thr Gly Arg Thr Trp Ala Gln
1 5 10

<210> 120

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 120

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Val
1 5 10

<210> 121

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 121

His Glu Val Arg Asn Ala Ser Gly Val Tyr His Leu
1 5 10

<210> 122

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 122

Tyr Glu Val His Ser Thr Thr Asp Gly Tyr His Val
1 5 10

<210> 123

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 123

Val	Glu	Val	Lys	Asn	Thr	Ser	Gln	Ala	Tyr	Met	Ala
1				5					10		

<210> 124

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 124

Ile	Gln	Val	Lys	Asn	Asn	Ser	His	Phe	Tyr	Met	Ala
1				5					10		

<210> 125

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 125

Val	Gln	Val	Lys	Asn	Thr	Ser	Thr	Met	Tyr	Met	Ala
1				5					10		

<210> 126

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 126

Val	Gln	Val	Lys	Asn	Thr	Ser	His	Ser	Tyr	Met	Val
1				5					10		

<210> 127
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 127

Val Gln Val Ala Asn Arg Ser Gly Ser Tyr Met Val
1 5 10

<210> 128
<211> 12
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (7)..(7)
<223> Xaa represents any amino acid

<400> 128

Val Glu Ile Lys Asn Thr Xaa Asn Thr Tyr Val Leu
1 5 10

<210> 129
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 129

Val Glu Ile Lys Asn Thr Ser Asn Thr Tyr Val Leu
1 5 10

<210> 130
<211> 12
<212> PRT
<213> hepatitis C virus

<400> 130

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<210> 131

<211> 12

<212> PRT

<213> hepatitis C virus

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Ile Asn Tyr Arg Asn Thr Ser Gly Ile Tyr His Val
1 5 10

<210> 132

<211> 12

<212> PRT

<213> hepatitis C virus

<400> 132

Ile Asn Tyr His Asn Thr Ser Gly Ile Tyr His Ile
1 5 10

<210> 133

<211> 12

<212> PRT

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<400> 133

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val
1 5 10

<210> 134

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<400> 134

Gln His Tyr Arg Asn Val Ser Gly Ile Tyr His Val
1 5 10

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<400> 135

Ile Gln Val Lys Asn Ala Ser Gly Ile Tyr His Leu
1 5 10

<210> 136
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<400> 136

Ala His Tyr Thr Asn Lys Ser Gly Leu Tyr His Leu
1 5 10

<210> 137
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<400> 137

Leu Asn Tyr Ala Asn Lys Ser Gly Leu Tyr His Leu
1 5 10

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<400> 139

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1 5 10

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Ile Tyr Glu Met Ser Gly Met Ile Leu His Ala
1 5 10

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Val Tyr Glu Ala Lys Asp Ile Ile Leu His Thr

1 5 10

<210> 142
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<223> Xaa represents any amino acid

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<400> 143

Val Trp Gln Leu Arg Asp Ala Val Leu His Val
1 5 10

<210> 144
<211> 11
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<400> 144

Ile Trp Gln Met Gln Gly Ala Val Leu His Val
1 5 10

<210> 145

<211> 11
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<400> 145

Val Trp Gln Leu Lys Asp Ala Val Leu His Val
1 5 10

<210> 146
<211> 11
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<400> 146

Val Trp Gln Leu Glu Glu Ala Val Leu His Val
1 5 10

<210> 147
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<212> PRT
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<220>
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<213> hepatitis C virus

<400> 148

Val Tyr Glu Ala Asp His His Ile Leu His Leu
1 5 10

<210> 149

<211> 11

<212> PRT

<213> hepatitis C virus

<400> 149

Val Tyr Glu Ala Asp His His Ile Leu Ala Leu
1 5 10

<210> 150

<211> 11

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<213> hepatitis C virus

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Val Phe Glu Ala Asp His His Ile Leu His Leu
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Val Tyr Glu Ser Asp His His Ile Leu His Leu
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Val Phe Glu Glu Thr Met Ile Leu His Leu
1 5 10

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<211> 11

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<213> hepatitis C virus

<400> 153

Val Tyr Glu Ala Glu Thr Leu Ile Leu His Leu
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<211> 11

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<213> hepatitis C virus

<400> 154

Val Tyr Glu Ala Asn Gly Met Ile Leu His Leu
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<210> 155

<211> 11

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<213> hepatitis C virus

<400> 155

Val Tyr Glu Ala Gly Asp Ile Ile Leu His Leu
1 5 10

<210> 156
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<213> hepatitis C virus

<400> 156

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1 5 10

<210> 157
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<213> hepatitis C virus

<400> 157

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1 5 10

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<400> 158

Ile Arg Glu Gly Asn Ile Ser Arg Cys Trp Val Leu Pro
1 5 10

<210> 159
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<400> 159

Glu Asn Ser Ser Gly Arg Phe His Cys Trp Ile Pro Ile
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<210> 160
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<400> 160

Glu Arg Ser Gly Asn Arg Thr Phe Cys Trp Thr Ala Val
1 5 10

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<212> PRT
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<400> 161

Glu Leu Gln Gly Asn Lys Ser Arg Cys Trp Ile Pro Val
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<400> 162

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<400> 163

Glu Trp Lys Asp Asn Thr Ser Arg Cys Trp Ile Pro Val
1 5 10

<210> 164
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<400> 168

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<400> 170

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<211> 13

<212> PRT

<213> hepatitis C virus

<400> 171

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<222> (3)..(4)

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<211> 13

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<400> 173

Val Lys Thr Gly Asn Leu Thr Lys Cys Trp Leu Ser Ala
1 5 10

<210> 174

<211> 13

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<213> hepatitis C virus

<400> 174

Val Arg Ser Gly Asn Thr Ser Arg Cys Trp Ile Pro Val
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<211> 10

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Val Lys Asn Ala Ser Val Pro Thr Ala Ala
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<400> 176

Val Lys Asp Ala Asn Val Pro Thr Ala Ala
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<210> 177

<211> 10

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<213> hepatitis C virus

<400> 177

Ala Arg Ile Ala Asn Ala Pro Ile Asp Glu
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<211> 10

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<213> hepatitis C virus

<400> 178

Val Ser Lys Pro Gly Ala Leu Thr Lys Gly
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<210> 179

<211> 10

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<213> hepatitis C virus

<400> 179

Val Ser Arg Pro Gly Ala Leu Thr Arg Gly
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<211> 10

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<400> 180

Val Asn Gln Pro Gly Ala Leu Thr Arg Gly
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<210> 181

<211> 10

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<213> hepatitis C virus

<400> 181

Val Ser Gln Pro Gly Ala Leu Thr Arg Gly
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<210> 182

<211> 10

<212> PRT
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Val Ser Gln Pro Gly Ala Leu Thr Lys Gly
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<210> 183
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Val Ser Arg Pro Gly Ala Leu Thr Glu Gly
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<400> 184

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1 5 10

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<400> 185

Ala Pro Tyr Thr Ala Ala Pro Leu Glu Ser
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<400> 186

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<210> 187
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<400> 187

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1 5 10

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<400> 188

Val Pro Asn Ala Ser Thr Pro Val Thr Gly
1 5 10

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<400> 189

Val Gln Asn Ala Ser Val Ser Ile Arg Gly

1 5 10

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<400> 190

Val Lys Ser Pro Cys Ala Ala Thr Ala Ser
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Ser Pro Arg Met His His Thr Thr Gln Glu
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<400> 192

Ser Pro Arg Leu Tyr His Thr Thr Gln Glu
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<400> 193

Thr Ser Arg Arg His Trp Thr Val Gln Asp
1 5 10

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<213> hepatitis C virus

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<400> 194

Ala Pro Lys Arg His Tyr Phe Val Gln Glu
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Ser Pro Gln Tyr His Thr Phe Val Gln Glu
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<213> hepatitis C virus

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Ser Pro Gln His His Asn Phe Ser Gln Asp
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<210> 197

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 197

Ser Pro Gln His His Ile Phe Val Gln Asp
1 5 10

<210> 198

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<212> PRT

<213> hepatitis C virus

<400> 198

Ser Pro Glu His His His Phe Val Gln Asp
1 5 10

<210> 199

<211> 10

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<213> hepatitis C virus

<400> 199

Arg Pro Arg Arg His Trp Thr Thr Gln Asp
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<210> 200

<211> 10

<212> PRT

<213> hepatitis C virus

<400> 200

Arg Pro Arg Arg His Trp Thr Ala Gln Asp
1 5 10

<210> 201

<211> 10

<212> PRT
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<400> 201

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<212> PRT
<213> hepatitis C virus

<400> 202

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1				5					10

<210> 203
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<212> PRT
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<400> 203

Gln	Pro	Arg	Arg	His	Trp	Thr	Val	Gln	Asp
1				5					10

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<400> 204

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<400> 205

Arg Pro Arg Met His Gln Val Val Gln Glu
1 5 10

<210> 206
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<400> 206

Arg Pro Arg Met Tyr Glu Ile Ala Gln Asp
1 5 10

<210> 207
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<400> 207

Arg His Arg Gln His Trp Thr Val Gln Asp
1 5 10

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ggccctagat tgggtgtgcg cgcgacgaga aagacttccg agcggtcgca acctcgaggt	180
agacgtcagc ctatcccca ggctcgtcgg cccgagggca ggacctgggc tcagcccggg	240
tacccttggc ccctctatgg caatgagggc tgcgggtggg cgggatggct cctgtctccc	300
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aaggatcatc atacccttac gtgcggcttc gccgacctca tggggtacat accgctcgtc	420
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ggcgtgaact atgcaacagg gaaccttctt ggttgctctt tctctatctt ccttctggcc	540
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taccacgtca ccaatgattg ccctaactcg agtattgtgt acgaggcggc cgatgccatc	660
ctgcacactc cgggggtgct cccttgctt cgtgagggca acgcctcgag gtgttgggtg	720
gcgatgacct ctacggtggc caccagggat ggcaactcc ccgcgacgca gcttcgacgt	780
cacatcgatc tgcttgctcg gagcgccacc ctctgttcgg ccctctacgt gggggacctc	840
tgcgggtctg tctttcttgt cggccaactg ttcaccttct ctcccaggcg cactggacg	900
acgcaagggt gcaattgctc tatctatccc ggccatataa cgggtcaccg catggca	957

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ggccccagggt tgggtgtgcg cgcgactagg aagacttccg agcggtcgca acctcgtgga	180
aggcgacaac ctatcccca ggctcgccgg cccgagggta ggacctgggc tcagcccggg	240
tacccttggc ccctctatgg caacgaggggt atgggggtggg caggatggct cctgtcaccc	300
cgtggctctc ggccctagttg gggccccaca gacccccggc gtaggtcgcg taatttgggt	360
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ggcgtgaact atgcaacagg gaatctgccc ggttgctctt tctctatctt cctcttagct	540
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taccatgtca cgaacgactg ctccaactca agtatttgtt atgaggcagc ggacatgac	660
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gcgctcactc ccacgctcgc ggccaggaac agcagcatcc ccaccacgac aatacgacgc	780
cacgtcgatt tgctcgttgg ggcggtgct ctctgttccg ctatgtacgt tggggatctc	840
tgcggtaccg tttttctcgt ctcccagctg ttacaccttct cacctcgccg gtatgagacg	900
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 <213> hepatitis C virus

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ggccccagag tgggtgtgcg cgcgacgagg aagacttccg agcggtcgca acctcgcggg	180
aggcgtcagc ctattcccaa ggcccgcga cccgagggaa ggtcctgggc gcagcccggg	240
tacccttggc ccctctatgg caacgagggc tgtgggtggg cgggatggct cctgtcccc	300
cgcggctctc ggcttagttg gggcccttct gacccccggc ggaggtcacg caatttgggt	360
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ggcgtgaatt acgcaacagg gaacctcccc ggttgctctt tttctatctt cttgctcgtc	540
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taccatgtca ccaatgattg cccaatgcg tccgttgtgt acgagacgga gaacctgac	660
atgcatctgc ccgggtgtgt gccctacgta cgcgagggca acgcctcgag gtgttgggtc	720
tccttagtc ccaccgtagc cgccagggat tcgcgcgtcc ccgtcagtga ggttcggcgt	780
cgtgtcgact cgattgtcgg ggccgctgcg ttctgttcgg ctatgtatgt aggggacct	840
tgcggtcca tcttccttgt tggccagatc ttacaccttct ctcccaggca ccattggacg	900

acgcaagact gcaattgctc catctaccca ggccatgtga caggatcatcg aatggct 957

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<213> hepatitis C virus

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cgagggtccc gtcctctctg gggccccaat gacccccggc atagggtccc caacgtgggt 360
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tacatggtga ccaacgactg caccaatgat agcattacct ggcaactcca ggctgctgtc 660
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cacattgaca tgggtgtgat gtccgccacg ctctgtccg ctctttacgt gggggacctc 840
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<400> 212
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cgacgccagc ccatcccgaa agatcggcgc tccaccggca agtcctgggg aaagccagga	240
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cgcgggtctc gtcctacttg gggccccacc gacccccggc atagatcacg caatttgggc	360
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tactacgcca ctaatgattg ctcaaacaac agcatcacct ggcagctcac tgacgcagtt	660
ctccatcttc ctggatgcgt cccatgtgag aatgataatg gcaccttgca ttgctggata	720
caagtaacac ccaacgtggc tgtgaaacac cgcgggtgcgc tcactcgtag cctgcgaaca	780
cacgtcgaca tgatcgtaat ggcagctacg gcctgctcgg ccttgatatgt gggagatgtg	840
tgcgggggccg tgatgattct atcgcaggct ttcatgggat caccacaacg ccacaacttc	900
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aggcgccagc ccatccctaa agatcggcgc accactggca agtcctgggg aaggccagga	240
tacccttggc ccctgtatgg gaatgagggc ctcggtggg caggggtggct cctgtcccc	300
cgcgggttctc gcccttcatg gggccccacc gacccccggc ataaatcgcg caacttgggt	360
aaggtcacg ataccctaac gtgcggtttt gccgacctca tggggtacat acccgtcggt	420
ggcgctccc ttggcggcgt tgccagagcc ctgcgccatg gggtgagggg tctggaggac	480

gggataaatt atgcaacggg gaatttgccc ggttgctctt tctctatctt tctcttgccc	540
ctcttgctctt gcatctctgt gccagtttcc gccgtggagg tcaaggacac cggcgactcc	600
tacatgccga ccaacgattg ctccaactct agtatcgttt ggcagcttga aggagcagtg	660
cttcatactc ctggatgcgt cccttggtgag cgtaccgcca acgtctctcg atgttggttg	720
ccggttgccc ccaatctcgc cataagtcaa cctggcgctc tactaaggg cctgcgagca	780
cacatcgata tcatcgatgt gtctgctacg gtctgttctg ccctttatgt gggggacgtg	840
tgtggcgcg cgtatgctggc cgctcaggtc gtcgtcgtgt cgccacaaca ccatacgttt	900
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<210> 215
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 215
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<210> 216
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 216

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<210> 217
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 217	
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ctctttctcat gcttggtctg tcctgcagca gggctcgagt accggaatgt atccggcctc	600
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tgcggggcag ttttcctcgt aggacaagca ttcacattca gaccccgacg ccaccagaca	900
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<210> 218
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 218	
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<210> 219
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 219	
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ggcccacgat tgggtgtgcg cgcaactcgt aagacttcag agcggtcaca accccgcgga	180
cggcgacagc ctattcccaa ggcacgcccg agcggaggac ggtcctgggc gcagcctggg	240
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<210> 220
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 220
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 gtccagttgt gcaattgctc actataccca ggacacatta caggacatca tatggct 957

<210> 221
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 221
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 aaggtcatcg ataccctgac gtgcggcttc gccgacctca tgggatacat ccgcatcgtg 420

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tgcggaggtg	ccttctgat	ggggcagatg	atcacttttc	ggcgcgctcg	ccactggacc	900
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<210> 222
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 222						
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<210> 223
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 223	
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<210> 224
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 224
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<210> 225
<211> 957
<212> DNA
<213> hepatitis C virus

<400> 225
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<210> 226
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 226	
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gtgcagaact	gcaactgttc	catttacagt	ggccatgtta	ccggccaccg	gatggca	957

<210> 227
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<400> 227						
atgagcacac	ttccaaaacc	ccaaagaaaa	acaaaagaa	acaccaaccg	tcgcccacg	60
gacgtcaagt	tcccgggtgg	cggtcagatc	gttggcggag	tttacttggt	gccgcgcagg	120
ggcccccggt	tgggtgtgcg	cgcgacgaga	aagacttccg	agcgatccca	gcccagaggc	180
aggcgccaac	ctataccaaa	ggcgcgccag	ccccagggca	ggcactgggc	tcagcccgga	240
tacccttggc	ctctttatgg	aaacgagggc	tgtgggtggg	caggttggct	cctgtcccc	300
cgcggtccc	ggccacattg	gggcccgaat	gacccccggc	gtcgatcccg	gaatttgggt	360
aaggtcatcg	ataccctaac	gtgtgggttc	gccgatctca	tggggtacat	tcccgtcgtg	420
ggcgcgcctt	tgggcggcgt	cgcggtgctg	ctcgcacatg	gcgtgagggc	aatcgaggac	480
gggatcaatt	atgcaacagg	gaatctcccc	ggttgctctt	tctctatctt	ccttttggca	540
ctactctcgt	gcctcacaac	gccagcttcg	gctcttacct	acggcaactc	cagtgggcta	600
taccatctca	caaatgattg	ccccaactcc	agcatcgtgc	tggaggcgga	tgctatgatc	660
ttgcatttgc	ctggatgctt	gccttgtgtg	agggtcgatg	atcgggccac	ctgttggcat	720
gctgtgacct	ccaccctggc	cataccaaat	gcttcacgc	ccgcaacggg	attccgcagg	780
catgtggatc	ttcttgcggg	cgccgcagtg	gtttgctcat	ccctgtacat	cggggacctg	840
tgtggctctc	tctttttggc	gggacaacta	ttcacctttc	agccccgccg	tcattggact	900
gtgcaagact	gcaactgctc	catctataca	ggccacgtca	ccggccacag	gatggct	957

<210> 228
 <211> 957
 <212> DNA
 <213> hepatitis C virus

<220>

<221> misc_feature
 <222> (383)..(383)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (387)..(387)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (924)..(924)
 <223> n represents any nucleotide

<220>
 <221> misc_feature
 <222> (928)..(928)
 <223> n represents any nucleotide

<400> 228
 atgagcacac ttccaaaacc ccaaagaaaa accaaaagaa atactaaccg tcgccctatg 60
 gacgtcaagt tccccgggcg cggccagatc gttgggtggag tttacttggt gccgcgcagg 120
 ggccctcggt tgggtgtgcg cgcgacgaga aagacctccg aacggtccca gcctagaggc 180
 aggcgccagc ccatacaaaa ggtacgccag cgcacaggcc gtagctgggg tcaaccgggc 240
 tacccttggc ccctttatgg caacgagggc tgcggatggg cgggatggct cctgtcccc 300
 cgcggtctc gtcctaattg gggccccaac gacccccggc gaagggtccg caacttgggt 360
 aaggtcatcg atacccttac atncggncta gccgacctca tggggtacat ccctgtccta 420
 ggagggccgc ttggcggcgt tgcggctgcc ctggcgcatg gcgttagggc aatcgaggac 480
 ggggtcaatt acgcaacagg gaatcttctt ggttgctcct tttctatctt cctcttagca 540
 ctgttatcgt gcctcactac accagcctca gcaattcaag tcaagaacgc ctctgggatc 600
 taccatctta ccaatgactg ctccaacaac agcatcgttt ttgaggcgga gaccatgata 660
 ctgcattctc caggttgtgt cccatgtatc aaggcgggga atgagtcacg atgttggtc 720
 cctgtctccc ccaccttagc cgtccccaac tcatcagtgc caatccacgg gtttcgccga 780

cacgtagacc tcctcggttg ggcagcggca ttttggtcgg ccatgtacat cggagacctc 840
 tgtggttagca taatcttggt agggcagctt ttacttttca ggcctaagta ccatcaggtt 900
 acccaggatt gtaactgctc tatnaacnct ggccacgtca cgggacacag gatggca 957

<210> 229
 <211> 319
 <212> PRT
 <213> hepatitis C virus

<400> 229

Met Ser Thr Asn Pro Lys Pro Gln Lys Lys Asn Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
 130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr
180 185 190

Gln Val Arg Asn Ser Thr Gly Leu Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Ala Ile Leu His Thr Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Ala Ser Arg Cys Trp Val
225 230 235 240

Ala Met Thr Pro Thr Val Ala Thr Arg Asp Gly Lys Leu Pro Ala Thr
245 250 255

Gln Leu Arg Arg His Ile Asp Leu Leu Val Gly Ser Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg His Trp Thr Thr Gln Gly Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 230
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 230

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly

20

25

30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Pro Glu Gly Arg Thr Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Met Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
 100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Leu
 130 135 140

Gly Gly Ala Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
 145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
 165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Ile Pro Ala Ser Ala Tyr
 180 185 190

Glu Val Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys Ser
 195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Ala Asp Met Ile Met His Thr Pro
 210 215 220

Gly Cys Val Pro Cys Val Arg Glu Ser Asn Phe Ser Arg Cys Trp Val
 225 230 235 240

Ala Leu Thr Pro Thr Leu Ala Ala Arg Asn Ser Ser Ile Pro Thr Thr
 245 250 255

Thr Ile Arg Arg His Val Asp Leu Leu Val Gly Ala Ala Ala Leu Cys
260 265 270

Ser Ala Met Tyr Val Gly Asp Leu Cys Gly Ser Val Phe Leu Val Ser
275 280 285

Gln Leu Phe Thr Phe Ser Pro Arg Arg Tyr Glu Thr Val Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala
305 310 315

<210> 231
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 231

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Val Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Phe Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Thr Pro Val Ser Ala Ala
180 185 190

Glu Val Lys Asn Ile Ser Thr Gly Tyr Met Val Thr Asn Asp Cys Thr
195 200 205

Asn Asp Ser Ile Thr Trp Gln Leu Gln Ala Ala Val Leu His Val Pro
210 215 220

Gly Cys Val Pro Cys Glu Lys Val Gly Asn Thr Ser Arg Cys Trp Ile
225 230 235 240

Pro Val Ser Pro Asn Val Ala Val Gln Gln Pro Gly Ala Leu Thr Gln
245 250 255

Gly Leu Arg Thr His Ile Asp Met Val Val Met Ser Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Val Met Leu Ala Ala
275 280 285

Gln Met Phe Ile Val Ser Pro Gln His His Trp Phe Val Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly Thr Ile Thr Gly His Arg Met Ala
305 310 315

<210> 232

<211> 319

<212> PRT

<213> hepatitis C virus

<400> 232

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Ser Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Thr Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Arg Val Ile Asp Thr Ile Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Val Thr Val Pro Val Ser Ala Val
180 185 190

Glu Val Arg Asn Ile Ser Ser Ser Tyr Tyr Ala Thr Asn Asp Cys Ser
195 200 205

Asn Asn Ser Ile Thr Trp Gln Leu Thr Asp Ala Val Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Glu Asn Asp Asn Gly Thr Leu His Cys Trp Ile
225 230 235 240

Gln Val Thr Pro Asn Val Ala Val Lys His Arg Gly Ala Leu Thr Arg
245 250 255

Ser Leu Arg Thr His Val Asp Met Ile Val Met Ala Ala Thr Ala Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Val Met Ile Leu Ser
275 280 285

Gln Ala Phe Met Val Ser Pro Gln Arg His Asn Phe Thr Gln Glu Cys
290 295 300

Asn Cys Ser Ile Tyr Gln Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 233
<211> 319
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (319)..(319)
<223> Xaa represents any amino acid

<400> 233

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Thr Thr Gly Lys Ser Trp Gly Arg Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Ser Ala Leu Leu Ser Cys Ile Ser Val Pro Val Ser Ala Val
180 185 190

Glu Val Lys Asn Thr Ser Thr Ser Tyr Met Val Thr Asn Asp Cys Ser
195 200 205

Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr Pro
210 215 220

Gly Cys Val Pro Cys Glu Gln Ile Gly Asn Ala Ser Arg Cys Trp Val
225 230 235 240

Pro Val Ser Pro Asn Val Ala Ile Arg Gln Pro Gly Thr Leu Thr Lys
245 250 255

Gly Leu Arg Ala His Val Asp Val Ile Val Met Ser Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Ile Ala Ala
275 280 285

Gln Ala Val Ile Ala Ser Pro Gln Arg His Thr Phe Val Gln Glu Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Xaa
305 310 315

<210> 234
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 234

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Asp Arg Arg Pro Thr Gly Lys Ser Trp Gly Lys Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Thr Asp Pro
100 105 110

Arg His Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val

130	135	140
Gly Gly Val Ala Arg	Ala Leu Ala His Gly Val Arg Val Leu Glu Asp	
145	150	155 160
Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile		
	165	170 175
Phe Leu Leu Ala Leu Leu Ser Cys Ile Thr Val Pro Val Ser Gly Leu		
	180	185 190
Gln Val Lys Asn Thr Ser Ser Ser Tyr Met Val Thr Asn Asp Cys Gln		
	195	200 205
Asn Ser Ser Ile Val Trp Gln Leu Arg Asp Ala Val Leu His Val Pro		
	210	215 220
Gly Cys Val Pro Cys Glu Glu Lys Gly Asn Ile Ser Arg Cys Trp Ile		
	225	230 235 240
Pro Val Ser Pro Asn Ile Ala Val Ser Gln Pro Gly Ala Leu Thr Lys		
	245	250 255
Gly Leu Arg Thr His Ile Asp Thr Ile Ile Ala Ser Ala Thr Phe Cys		
	260	265 270
Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Ala Val Met Leu Ala Ser		
	275	280 285
Gln Val Phe Ile Ile Ser Pro Gln His His Lys Phe Val Gln Asp Cys		
	290	295 300
Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala		
	305	310 315

<210> 235
 <211> 419
 <212> PRT
 <213> hepatitis C virus

<400> 235

Met	Ser	Thr	Leu	Pro	Lys	Pro	Gln	Arg	Gln	Thr	Lys	Arg	Asn	Thr	Leu	1	5	10	15
Arg	Arg	Pro	Gln	Asn	Val	Lys	Phe	Pro	Gly	Gly	Gly	Gln	Ile	Val	Gly	20	25	30	
Gly	Val	Tyr	Val	Leu	Pro	Arg	Arg	Gly	Pro	Arg	Leu	Gly	Val	Arg	Ala	35	40	45	
Val	Arg	Lys	Thr	Ser	Glu	Arg	Ser	Gln	Pro	Arg	Lys	Gln	Arg	His	Leu	50	55	60	
Ile	Pro	Lys	Ala	Arg	Ser	Arg	Glu	Gly	Arg	Ser	Trp	Ala	Gln	Pro	Gly	65	70	75	80
Tyr	Pro	Trp	Pro	Leu	Tyr	Gly	Asn	Lys	Gly	Cys	Gly	Leu	Ala	Gly	Trp	85	90	95	
Leu	Leu	Ser	Pro	Arg	Gly	Ser	Arg	Pro	Ser	Trp	Gly	Pro	Asn	Asp	Pro	100	105	110	
Arg	Arg	Arg	Ser	Arg	Asn	Phe	Gly	Lys	Val	Ile	Asp	Thr	Leu	Thr	Cys	115	120	125	
Gly	Phe	Ala	Asp	Leu	Met	Gly	Tyr	Ile	Pro	Leu	Val	Gly	Ala	Pro	Val	130	135	140	
Gly	Gly	Val	Ala	Arg	Ala	Leu	Ala	His	Gly	Val	Arg	Ala	Leu	Gly	Asp	145	150	155	160
Gly	Val	Asn	Tyr	Ala	Thr	Gly	Asn	Leu	Pro	Gly	Cys	Ser	Phe	Ser	Ile	165	170	175	
Phe	Leu	Leu	Ala	Leu	Phe	Ser	Cys	Leu	Thr	Cys	Pro	Ala	Ser	Gly	Leu	180	185	190	
Glu	Tyr	Thr	Asn	Thr	Ser	Gly	Leu	Tyr	Val	Leu	Thr	Asn	Asp	Cys	Ser	195	200	205	
Asn	Gly	Ser	Ile	Val	Tyr	Glu	Ala	Glu	Asp	Val	Ile	Leu	His	Leu	Pro	210	215	220	

Gly Cys Val Pro Cys Val Thr Thr Gly Asn Gln Ser Ser Cys Trp Thr
225 230 235 240

Thr Val Ser Thr Thr Val Ala Val Arg Thr Leu Gly Val Thr Thr Ala
245 250 255

Ser Ile Arg Thr His Val Asp Met Leu Val Gly Ala Arg Gln Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Phe Gly Ala Val Phe Leu Val Gly
275 280 285

Gln Ala Phe Thr Phe Arg Pro Arg Arg His Thr Thr Val Gln Thr Cys
290 295 300

Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala Trp
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ile Gly Leu Val Ile Ser His
325 330 335

Leu Met Arg Leu Pro Gln Thr Leu Phe Asp Leu Val Ser Gly Thr His
340 345 350

Trp Gly Val Met Ala Gly Leu Ala Tyr Phe Ser Met Gln Gly Asn Trp
355 360 365

Ala Lys Val Val Ile Val Leu Ile Met Phe Ser Gly Val Asp Ala Asn
370 375 380

Thr Tyr Thr Thr Ala Gly Ser Met Ala Gln Ser Ile Tyr Arg Leu Thr
385 390 395 400

Asp Ile Phe Ser Thr Gly Pro Ser Gln Lys Leu Gln Leu Val Asn Ser
405 410 415

Asn Gly Ser

<210> 236

<211> 383

<212> PRT

<213> hepatitis C virus

<400> 236

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Leu Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Leu Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Tyr
180 185 190

Asn Tyr Arg Asn Ser Ser Gly Val Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Thr Asp Tyr His Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Arg Glu Gly Asn Lys Ser Thr Cys Trp Val
225 230 235 240

Ser Leu Thr Pro Thr Val Ala Ala Gln His Leu Asn Ala Pro Leu Glu
245 250 255

Ser Leu Arg Arg His Val Asp Leu Met Val Gly Gly Ala Thr Leu Cys
260 265 270

Ser Ala Leu Tyr Ile Gly Asp Val Cys Gly Gly Val Phe Leu Val Gly
275 280 285

Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala Trp
305 310 315 320

Asp Met Met Met Asn Trp Ser Pro Thr Ala Thr Leu Val Leu Ala Gln
325 330 335

Leu Met Arg Ile Pro Gly Ala Met Val Asp Leu Leu Ala Gly Gly His
340 345 350

Trp Gly Ile Leu Val Gly Ile Ala Tyr Phe Ser Met Gln Ala Asn Trp
355 360 365

Ala Lys Val Ile Leu Val Leu Phe Leu Phe Ala Gly Val Asp Ala
370 375 380

<210> 237

<211> 319

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (102)..(102)

<223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (105)..(105)
 <223> Xaa represents any amino acid

<220>
 <221> MISC_FEATURE
 <222> (114)..(114)
 <223> Xaa represents any amino acid

<400> 237

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Thr Glu Gly Arg Ser Trp Ala Gln Pro Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro Arg Xaa Ser Arg Xaa Ser Trp Gly Pro Asn Asp Pro
 100 105 110

Arg Xaa Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
 115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
 130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp

Met Ser Thr Asn Pro Lys Leu Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Ser Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala Pro Val
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Gly Val
180 185 190

Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp Cys Pro
195 200 205

Asn Ala Ser Ile Val Tyr Glu Thr Asp Asn His Ile Leu His Leu Pro
210 215 220

Gly Cys Val Pro Cys Val Lys Thr Gly Asn Gln Ser Arg Cys Trp Val
225 230 235 240

Ala Leu Thr Pro Thr Val Ala Ser Pro Tyr Val Gly Ala Pro Leu Glu
245 250 255

Pro Leu Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp Cys
290 295 300

Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Arg Met Ala
305 310 315

<210> 239
<211> 319
<212> PRT
<213> hepatitis C virus

<400> 239

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Met Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Thr Gly Arg Ser Trp Gly Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Ala Asn Glu Gly Leu Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro Asn Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Lys Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Gly Pro Ile
130 135 140

Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Val Leu Glu Asp
145 150 155 160

Gly Val Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Ile Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala Val
180 185 190

Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys Pro
195 200 205

Asn Ser Ser Ile Val Tyr Glu Ala Asp Asn Leu Ile Leu His Ala Pro
210 215 220

Gly Cys Val Pro Cys Val Met Thr Gly Asn Val Ser Arg Cys Trp Val
225 230 235 240

Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Leu Gly Ala Val Thr Ala
245 250 255

Pro Leu Arg Arg Ala Val Asp Tyr Leu Ala Gly Gly Ala Ala Leu Cys
260 265 270

Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val Gly
275 280 285

Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asn Cys
290 295 300

Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Arg Met Ala
305 310 315

<210> 240

<211> 383

<212> PRT
<213> hepatitis C virus

<400> 240

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Gln Pro Gln Gly Arg His Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro Arg Gly Ser Arg Pro His Trp Gly Pro Asn Asp Pro
100 105 110

Arg Arg Arg Ser Arg Asn Leu Gly Lys Val Ile Asp Thr Leu Thr Cys
115 120 125

Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Val Val Gly Ala Pro Leu
130 135 140

Gly Gly Val Ala Ala Ala Leu Ala His Gly Val Arg Ala Ile Glu Asp
145 150 155 160

Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile
165 170 175

Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Thr Pro Ala Ser Ala Leu
180 185 190

Thr Tyr Gly Asn Ser Ser Gly Leu Tyr His Leu Thr Asn Asp Cys Pro

195	200	205
Asn Ser Ser Ile Val Leu Glu Ala Asp Ala Met Ile Leu His Leu Pro 210 215 220		
Gly Cys Leu Pro Cys Val Arg Val Asp Asp Arg Ser Thr Cys Trp His 225 230 235 240		
Ala Val Thr Pro Thr Leu Ala Ile Pro Asn Ala Ser Thr Pro Ala Thr 245 250 255		
Gly Phe Arg Arg His Val Asp Leu Leu Ala Gly Ala Ala Val Val Cys 260 265 270		
Ser Ser Leu Tyr Ile Gly Asp Leu Cys Gly Ser Leu Phe Leu Ala Gly 275 280 285		
Gln Leu Phe Thr Phe Gln Pro Arg Arg His Trp Thr Val Gln Asp Cys 290 295 300		
Asn Cys Ser Ile Tyr Thr Gly His Val Thr Gly His Arg Met Ala Trp 305 310 315 320		
Asp Met Met Met Asn Trp Ser Pro Thr Thr Thr Leu Val Leu Ser Ser 325 330 335		
Ile Leu Arg Val Pro Glu Ile Cys Ala Ser Val Ile Phe Gly Gly His 340 345 350		
Trp Gly Ile Leu Leu Ala Val Ala Tyr Phe Gly Met Ala Gly Asn Trp 355 360 365		
Leu Lys Val Leu Ala Val Leu Phe Leu Phe Ala Gly Val Glu Ala 370 375 380		

<210> 241
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 241

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Glu His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Ser Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Thr Ser
50 55 60

Ala Val Asn Tyr Arg Asn Ala Ser Gly Val Tyr His Ile Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Tyr His Ile Leu His
85 90 95

Leu Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met
180 185 190

Ala

<210> 242
<211> 193
<212> PRT

<213> hepatitis C virus

<400> 242

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Val His Tyr His Asn Thr Ser Gly Ile Tyr His Leu Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Phe Glu Ala Val His His Ile Leu His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys
100 105 110

Trp Val Ala Leu Thr Pro Thr Leu Ala Ala Pro Tyr Leu Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr
130 135 140

Leu Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ile Phe Leu
145 150 155 160

Ala Gly Gln Met Phe Thr Phe Arg Pro Arg Leu His Trp Thr Thr Gln
165 170 175

Glu Cys Asn Cys Ser Thr Tyr Pro Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 243
<211> 193
<212> PRT
<213> hepatitis C virus

<400> 243

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
35 40 45

Ser Ile Phe Leu Leu Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser
50 55 60

Ala Gln His Tyr Arg Asn Ile Ser Gly Ile Tyr His Val Thr Asn Asp
65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Thr Ser Arg Cys
100 105 110

Trp Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Val Gly Ala Pro
115 120 125

Leu Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr
130 135 140

Val Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu
145 150 155 160

Val Gly Gln Met Phe Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Asp Gly His Ile Thr Gly His Arg Met
 180 185 190

Ala

<210> 244
 <211> 193
 <212> PRT
 <213> hepatitis C virus

<400> 244

Thr Cys Gly Phe Ala Asp Leu Met Gly Tyr Ile Pro Leu Val Gly Ala
 1 5 10 15

Pro Val Gly Gly Val Ala Arg Ala Leu Ala His Gly Val Arg Ala Val
 20 25 30

Glu Asp Gly Ile Asn Tyr Ala Thr Gly Asn Leu Pro Gly Cys Ser Phe
 35 40 45

Ser Ile Phe Leu Leu Val Leu Leu Ser Arg Leu Thr Val Pro Ala Ser
 50 55 60

Ala Gln His Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp
 65 70 75 80

Cys Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Met His
 85 90 95

Leu Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Val Ser Arg Cys
 100 105 110

Trp Ile Pro Leu Thr Pro Thr Val Ala Val Pro Tyr Leu Gly Ala Pro
 115 120 125

Leu Thr Ser Val Arg Gln His Val Asp Leu Met Val Gly Ala Ala Thr
 130 135 140

Leu Cys Ser Ala Leu Tyr Ile Gly Asp His Cys Gly Gly Val Phe Leu
 145 150 155 160

Ala Gly Gln Met Val Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln
165 170 175

Asp Cys Asn Cys Ser Ile Tyr Val Gly His Ile Thr Gly His Arg Met
180 185 190

Ala

<210> 245
<211> 149
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (14)..(14)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (20)..(20)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (120)..(120)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (134)..(134)
<223> Xaa represents any amino acid

<400> 245

Asp Gly Ile Asn Tyr Ala Thr Gly Asn Ile Pro Gly Cys Xaa Phe Ser
1 5 10 15

Ile Phe Leu Xaa Ala Leu Leu Ser Cys Leu Thr Val Pro Ala Ser Ala
20 25 30

Thr Asn Tyr Arg Asn Val Ser Gly Ile Tyr His Val Thr Asn Asp Cys
35 40 45

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu Ala Leu
50 55 60

Pro Gly Cys Val Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
65 70 75 80

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Thr Ala Ala Pro Leu
85 90 95

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Val
100 105 110

Cys Ser Ala Leu Tyr Ile Gly Xaa Leu Cys Gly Gly Leu Phe Leu Val
115 120 125

Gly Gln Met Phe Ser Xaa Gln Pro Arg Arg His Trp Thr Thr Gln Asp
130 135 140

Cys Asn Cys Ser Ile
145

<210> 246
<211> 119
<212> PRT
<213> hepatitis C virus

<400> 246

Tyr His Ile Thr Asn Asp Cys Pro Asn Ser Ser Val Val Tyr Glu Thr
1 5 10 15

Asp His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val Arg Thr
20 25 30

Gly Asn Val Ser Arg Cys Trp Thr Pro Val Thr Pro Thr Val Ala Ala
35 40 45

Val Ser Val Asp Ala Pro Leu Glu Ser Phe Arg Arg His Val Asp Leu
50 55 60

Met Val Gly Ala Ala Thr Leu Cys Ser Val Leu Tyr Val Gly Asp Leu
65 70 75 80

Cys Gly Gly Ala Phe Leu Val Gly Gln Met Phe Thr Phe Gln Pro Arg
85 90 95

Arg His Trp Thr Thr Gln Asp Cys Asn Cys Ser Ile Tyr Thr Gly His
100 105 110

Ile Thr Gly His Arg Met Ala
115

<210> 247
<211> 94
<212> PRT
<213> hepatitis C virus

<400> 247

Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile Arg Arg Pro Gln Asp Val
1 5 10 15

Lys Phe Pro Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Val Leu Pro
20 25 30

Arg Arg Gly Pro Arg Leu Gly Val Cys Ala Thr Arg Lys Thr Ser Glu
35 40 45

Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg
50 55 60

Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr
65 70 75 80

Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp Leu Leu Ser Pro
85 90

<210> 248
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 248

Met Ser Thr Leu Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Ile
1 5 10 15

Arg Arg Pro Gln Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Val Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro
100

<210> 249
<211> 100
<212> PRT
<213> hepatitis C virus

<400> 249

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Pro Gly
65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
85 90 95

Leu Leu Ser Pro
100

<210> 250
<211> 68
<212> PRT
<213> hepatitis C virus

<400> 250

Thr Asn Arg Arg Pro Thr Asp Val Lys Phe Pro Gly Gly Gly Gln Ile
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val
20 25 30

Arg Ala Thr Gly Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
50 55 60

Pro Gly Phe Pro
65

<210> 251
<211> 80
<212> PRT
<213> hepatitis C virus

<400> 251

Lys Thr Lys Arg Asn Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro
1 5 10 15

Gly Gly Gly Gln Ile Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly
20 25 30

Pro Arg Leu Gly Val Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln
35 40 45

Pro Arg Gly Arg Arg Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly
50 55 60

Arg Ser Trp Ala Gln Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Asn Glu
65 70 75 80

<210> 252

<211> 74

<212> PRT

<213> hepatitis C virus

<400> 252

Thr Asn Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile
1 5 10 15

Val Gly Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val
20 25 30

Arg Ala Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg
35 40 45

Gln Pro Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln
50 55 60

Pro Gly Tyr Pro Trp Pro Leu Tyr Gly Lys
65 70

<210> 253
 <211> 100
 <212> PRT
 <213> hepatitis C virus

<400> 253

Met Ser Thr Asn Pro Lys Pro Gln Arg Lys Thr Lys Arg Asn Thr Asn
 1 5 10 15

Arg Arg Pro Met Asp Val Lys Phe Pro Gly Gly Gly Gln Ile Val Gly
 20 25 30

Gly Val Tyr Leu Leu Pro Arg Arg Gly Pro Arg Leu Gly Val Arg Ala
 35 40 45

Thr Arg Lys Thr Ser Glu Arg Ser Gln Pro Arg Gly Arg Arg Gln Pro
 50 55 60

Ile Pro Lys Ala Arg Arg Ser Glu Gly Arg Ser Trp Ala Gln Ala Gly
 65 70 75 80

Tyr Pro Trp Pro Leu Tyr Gly Asn Glu Gly Cys Gly Trp Ala Gly Trp
 85 90 95

Leu Leu Ser Pro
 100

<210> 254
 <211> 128
 <212> PRT
 <213> hepatitis C virus

<400> 254

Val Glu Val Lys Asp Thr Gly Asp Ser Tyr Met Pro Thr Asn Asp Cys
 1 5 10 15

Ser Asn Ser Ser Ile Val Trp Gln Leu Glu Gly Ala Val Leu His Thr
 20 25 30

Pro Gly Cys Val Pro Cys Glu Arg Thr Ala Asn Val Ser Arg Cys Trp
35 40 45

Val Pro Val Ala Pro Asn Leu Ala Ile Ser Gln Pro Gly Ala Leu Thr
50 55 60

Lys Gly Leu Arg Ala His Ile Asp Ile Ile Val Met Ser Ala Thr Val
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Val Cys Gly Ala Leu Met Leu Ala
85 90 95

Ala Gln Val Val Val Val Ser Pro Gln His His Thr Phe Val Gln Glu
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly Arg Ile Thr Gly His Arg Met Ala
115 120 125

<210> 255
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 255

Leu Glu Trp Arg Asn Thr Ser Gly Leu Tyr Val Leu Thr Asn Asp Cys
1 5 10 15

Ser Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Val Ile Leu His Thr
20 25 30

Pro Gly Cys Ile Pro Cys Val Gln Asp Gly Asn Thr Ser Thr Cys Trp
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Lys Tyr Val Gly Ala Thr Thr
50 55 60

Ala Ser Ile Arg Ser His Val Asp Leu Leu Val Gly Ala Ala Thr Met
65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Met Cys Gly Ala Val Phe Leu Val

85

90

95

Gly Gln Ala Phe Thr Phe Arg Pro Arg Arg His Gln Thr Val Gln Thr
 100 105 110

Cys Asn Cys Ser Leu Tyr Pro Gly His Leu Ser Gly His Arg Met Ala
 115 120 125

<210> 256

<211> 128

<212> PRT

<213> hepatitis C virus

<400> 256

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
 1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
 20 25 30

Pro Gly Cys Val Pro Cys Val Met Thr Gly Asn Thr Ser Arg Cys Trp
 35 40 45

Thr Pro Val Thr Pro Thr Val Ala Val Ala His Pro Gly Ala Pro Leu
 50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Leu
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Met
 85 90 95

Gly Gln Met Ile Thr Phe Arg Pro Arg Arg His Trp Thr Thr Gln Glu
 100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
 115 120 125

<210> 257

<211> 128

<212> PRT
<213> hepatitis C virus

<400> 257

Glu His Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Val Val Tyr Glu Thr Asp His His Ile Leu His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Ala Gly Asn Val Ser Arg Cys Trp
35 40 45

Thr Pro Val Thr Pro Thr Val Ala Ala Val Ser Met Asp Ala Pro Leu
50 55 60

Glu Ser Phe Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Val
65 70 75 80

Cys Ser Val Leu Tyr Val Gly Asp Leu Cys Gly Gly Ala Phe Leu Val
85 90 95

Gly Gln Met Phe Thr Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Thr Gly His Ile Thr Gly His Arg Met Ala
115 120 125

<210> 258
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 258

Val His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Thr Ser Ile Val Tyr Glu Thr Glu His His Ile Met His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Glu Asn Thr Ser Arg Cys Trp
35 40 45

Val Pro Leu Thr Pro Thr Val Ala Ala Pro Tyr Pro Asn Ala Pro Leu
50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Ala Ala Thr Met
65 70 75 80

Cys Ser Ala Phe Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Leu Phe Asp Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Val Ser Gly His Arg Met Ala
115 120 125

<210> 259
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 259

Ile His Tyr Arg Asn Ala Ser Gly Val Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp His His Ile Leu His Leu
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
35 40 45

Val Ala Leu Ser Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Val
50 55 60

Glu Ser Phe Arg Arg His Val Asp Met Met Val Gly Ala Ala Thr Val
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Met Phe Ser Phe Arg Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Ile Thr Gly His Gly Met Ala
115 120 125

<210> 260
<211> 128
<212> PRT
<213> hepatitis C virus

<400> 260

Val Asn Tyr Arg Asn Ala Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Thr Glu His His Ile Leu His Leu
20 25 30

Pro Gly Cys Leu Pro Cys Val Arg Val Gly Asn Gln Ser Arg Cys Trp
35 40 45

Val Ala Leu Thr Pro Thr Val Ala Ala Pro Tyr Ile Gly Ala Pro Leu
50 55 60

Glu Ser Leu Arg Ser His Val Asp Leu Met Val Gly Ala Ala Thr Ala
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Val Phe Leu Val
85 90 95

Gly Gln Met Phe Ser Phe Gln Pro Arg Arg His Trp Thr Thr Gln Asp
100 105 110

Cys Asn Cys Ser Ile Tyr Ala Gly His Val Thr Gly His Arg Met Ala
115 120 125

<210> 261

<211> 169
<212> PRT
<213> hepatitis C virus

<400> 261

Leu Ala His Gly Val Arg Ala Val Glu Asp Gly Ile Asn Tyr Ala Thr
1 5 10 15

Gly Asn Leu Pro Gly Cys Ser Phe Ser Ile Phe Leu Leu Ala Leu Leu
20 25 30

Ser Cys Leu Thr Val Pro Ala Ser Ala Val His Tyr His Asn Thr Ser
35 40 45

Gly Ile Tyr His Leu Thr Asn Asp Cys Pro Asn Ser Ser Ile Val Phe
50 55 60

Glu Ala Val His His Ile Leu His Leu Pro Gly Cys Val Pro Cys Val
65 70 75 80

Arg Thr Gly Asn Gln Ser Arg Cys Trp Val Ala Leu Thr Pro Thr Leu
85 90 95

Ala Ala Pro Tyr Leu Gly Ala Pro Leu Glu Ser Met Arg Arg His Val
100 105 110

Asp Leu Met Val Gly Thr Ala Thr Leu Cys Ser Ala Leu Tyr Val Gly
115 120 125

Asp Leu Cys Gly Gly Ile Phe Leu Ala Gly Gln Met Phe Thr Phe Arg
130 135 140

Pro Arg Leu His Trp Thr Thr Gln Glu Cys Asn Cys Ser Thr Tyr Pro
145 150 155 160

Gly His Ile Thr Gly His Arg Met Ala
165

<210> 262
<211> 128
<212> PRT

<213> hepatitis C virus

<400> 262

Val His Tyr His Asn Thr Ser Gly Ile Tyr His Ile Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Phe Glu Ala Glu His His Ile Leu His Leu
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Thr Gly Asn Gln Ser Arg Cys Trp
35 40 45

Ile Ala Leu Thr Pro Thr Leu Ala Ala Pro His Ile Gly Ala Pro Leu
50 55 60

Glu Ser Met Arg Arg His Val Asp Leu Met Val Gly Thr Ala Thr Leu
65 70 75 80

Cys Ser Ala Leu Tyr Ile Gly Asp Leu Cys Gly Gly Ile Phe Leu Val
85 90 95

Gly Gln Met Phe Asn Phe Arg Pro Arg Leu His Trp Thr Thr Gln Glu
100 105 110

Cys Asn Cys Ser Ile Tyr Pro Gly His Ile Thr Gly His Arg Met Ala
115 120 125

<210> 263

<211> 128

<212> PRT

<213> hepatitis C virus

<400> 263

Val Pro Tyr Arg Asn Ala Ser Gly Ile Tyr His Val Thr Asn Asp Cys
1 5 10 15

Pro Asn Ser Ser Ile Val Tyr Glu Ala Asp Asp Leu Ile Leu His Ala
20 25 30

Pro Gly Cys Val Pro Cys Val Arg Lys Asp Asn Val Ser Arg Cys Trp
 35 40 45

Val Gln Ile Thr Pro Thr Leu Ser Ala Pro Ser Phe Gly Ala Val Thr
 50 55 60

Ala Pro Leu Arg Arg Ala Val Asp Tyr Leu Val Gly Gly Ala Ala Leu
 65 70 75 80

Cys Ser Ala Leu Tyr Val Gly Asp Ala Cys Gly Ala Leu Phe Leu Val
 85 90 95

Gly Gln Met Phe Thr Tyr Arg Pro Arg Gln His Ala Thr Val Gln Asp
 100 105 110

Cys Asn Cys Ser Ile Tyr Ser Gly His Val Thr Gly His Gln Met Ala
 115 120 125

<210> 264
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 264
 ctccacagtc actgagagcg acatccgtac ggaggaggca atctaccaat gttgtgacct 60
 cgacccccaa gcccgcgtgg ccatcaagtc cctcaccgag aggctttatg ttgggggccc 120
 tcttaccaat tcaagggggg agaactgcgg ctatcgcagg tgccgcgcga gcggcgact 180
 gacaactagc tgtggttaaca ccctcacttg ctacatcaag gcccgggcag cctgtcgagc 240
 cgcagggctc caggactgca ccatgctcgt gtgtggcgac gacttagtcg ttatctgtga 300
 aagcgcgggg gtccaggagg acgcggcgag cctgagagcc 340

<210> 265
 <211> 340
 <212> DNA
 <213> hepatitis C virus

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<400> 265
ctcaacggtc actgagaatg acatccgtac tgaggaatca atttaccaat gttgtgactt      60
ggcccccgaa gccaggcagg ccataaggtc gctcacagag cggctttatg tcgggggtcc      120
cctgactaat tcgaaggggc agaactgcgg ttatcgccgg tgccgcgcaa gtggcgtgct      180
gacgactagc tgcggcaaca ccctcacatg ttacttgaag gccactgcgg cctgtcgagc      240
tgcaaagctc caggactgca cgatgctcgt gaacggagac gaccttgtcg ttatctgtga      300
gagtgcggga acccaggagg atgcggcggc cctacgagcc      340

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<210> 266
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (1)..(1)
<223> n represents any nucleotide

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<400> 266
ntcaacagtc accgagaacg acatccgtgt tgaggagtca atttaccaat gttgtgactt      60
ggcccccgag gccagacagg ccataaagtc gctcacagag cggctttata tcgggggtcc      120
cctgactaat tcaaaggggc agaactgtgg ctatcgccga tgccgcgcaa gcggcgtgct      180
gacgaccagc tgcggtaata cccttacatg ttacctaaag gcctctgcag cctgtcgagc      240
tgccaagctc caggactgca cgatgctcgt gtgcggggac gaccttgtcg ttatctgtga      300
aagcgcgga acccaagagg acgcggcgag cctacgagtc      340

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<210> 267
<211> 340
<212> DNA
<213> hepatitis C virus

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<400> 267
ctcaaccgtc actgagagag acatcaggac tgaggagtcc atatatcggg cttgttcctt      60
gcccaggagg gccacactg ccatacactc actgactgag agactttacg tgggagggcc      120

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catgttcaac agcaagggcc agacctgcgg gtacaggcgt tgccgcgcca gcggggtgct	180
taccactagc atggggaaca ccatcacatg ctatgtgaaa gccttagcgg cctgtaaggc	240
tgcagggata attgcgcca caatgctggt atgcggcgat gacttggttg tcatctcaga	300
gagccagggg accgaggagg acgagcggaa cctgagagcc	340

<210> 268
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 268	
ctcaaccgtc acggagaggg acataagaac agaagaatcc atatatcagg cttgttctct	60
gcctcaagaa gccagaactg tcatacactc gctcactgag agactttacg taggagggcc	120
catgacaaac agcaaagggc aatcctgcgg ctacaggcgt tgccgcgcaa gcggtgtttt	180
caccaccagc atggggaata ccatgacatg ttacatcaaa gcccttgag cgtgtaaggc	240
tgcagggatc gtggaccctg ttatgttggt gtgtggagac gacctggtcg tcatctcaga	300
gagccaaggt aacgaggagg acgagcgaaa cctgagagct	340

<210> 269
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 269	
ctcaactgtc actgaacagg acatcagggt ggaagaggag atataccaat gctgtaacct	60
tgaaccggag gccaggagag tgatctcctc cctcacggag cggctttact gcgggggccc	120
tatgttcaac agcaaggggg cccaatgtgg ttatcgccgg tgccgtgcca gtggagtcct	180
gcctaccagc ttcggcaaca caatcacttg ttacatcaag gccacagcgg ctgcgaaggc	240
cgcaggcctc cggaaccggg actttcttgt ctgcggagat gatctggtcg tagtggctga	300
gagcgatggc gtcgatgagg atagagcagc cctgagagcc	340

<210> 270
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 270
ctctactgtc actgaacatg acatcaggac ggaggaggag atataccaat gctgtgacct 60
tgagccagag gctcggaagg cgatcagcgc tctcacagag cggctgtaca tcggaggtcc 120
catgtacaac agtaaggggc tccagtgcgg ctatcgccgc tgccgcgcca gcggcgctctt 180
gcctaccagc ttcggcaata caataacctg ttacatcaag gccactgcag ccagcagggc 240
tgcggtctc aaagacccat ctttccttgt ctgcggagac gatttggtgg ttgtatctga 300
aagctgcggc gtcgaggagg acagagcagc tctgcgagcc 340

<210> 271
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 271
ctccactgta accgaaaagg acatcagggc cgaggaggag gtctatcagt gttgtgacct 60
ggagcccga gcccgaagg caattaccgc cctaacagag agactctacg tgggcggtcc 120
catgcataac agcaaggagg acctgtgcgg gtatcgaga tgctcgcaa gcggcgctcta 180
caccaccagc ttcgggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcaaagc 240
ggcggggctg agagactgca ccatgttggc ctgtggtgat gacctggttg tcatcgctga 300
gagcgatggc gtagaggagg acaaacgacc cctcggagcc 340

<210> 272
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 272
ctccactgta accgaaaagg acatcagggc cgaggaggag gtatatcagt gttgtgacct 60

ggagcccgag gcccgagag caattaccgc cctaacagag agactctacg tgggcggtcc	120
catgcataac agcaggggag acctgtgcgg gtatcgaga tgccgtgcga gcggcgtcta	180
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ctatcagagc	240
ggcggggctg agagactgca ccatgttggg ctgtggtgat gacctgggtcg tcattgctga	300
aagcgatggc gtagaggagg acaaacgagc cctcggagcc	340

<210> 273
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 273	
ctccactgta accgaaaag acatcagggt cgaggaggag gtatatcagt gttgtgacct	60
ggagcccgaa gcccgcaagg taattaccgc cctaacagag agactctatg tgggcggtcc	120
catgcataat agcaaaggag acctgtgcgg gtatcgaga tgccgcgcaa gcggcgtcta	180
caccaccagc ttcgggaaca cactgacgtg ctatctcaaa gcctcagccg ccatcagggc	240
gtcagggctg agagactgca ctatgctggg ctatggtgac gacctgggtcg tcattgccga	300
gagcgatggc gtagaggagg acaaacgagc cctcggagtc	340

<210> 274
 <211> 340
 <212> DNA
 <213> hepatitis C virus

<400> 274	
ctccactgta accgaaaag acatcagggt cgaggaggag gtgtatcagt gttgtgacct	60
ggagcccgag gcccgcaagg caattactgc cctaacagag agactctatg tgggcggtcc	120
catgcataac agcaagggag acctgtgtgg gtatcgaga tgccgcgcaa gcggcgtcta	180
caccaccagc ttcgggaaca cactgacgtg ctacctcaaa gcctcagccg ctatcagagc	240
ggcggggctg agagactgca ccatgttggg ctgtggtgat gacctgggtcg tcattgctga	300
gagcgatggc gttgaggagg acaaacgagc cctcggagcc	340

<210> 275
<211> 340
<212> DNA
<213> hepatitis C virus

<220>
<221> misc_feature
<222> (329)..(329)
<223> n represents any nucleotide

<400> 275
ctccactgtg actgagagag acatcaaggt cgaagaagaa gtctatcagt gttgtgatct 60
ggagcccagag gcccgcaagg taatagccgc cctcacggag agactctacg tgggcggccc 120
catgcataac agcaagggag acctttgcgg gtatcgtaga tgccgcgcga gcggcgata 180
caccaccagc ttcgggaaca caatgacgtg ctaccttaag gcctcagcag ccatcagggc 240
tgcggggcta aaggattgca ccatgctggt ttgcggtgac gacctagtcg tgatcgccga 300
gagcgggtggc gttgaggagg acaaacganc cctcggagct 340

<210> 276
<211> 340
<212> DNA
<213> hepatitis C virus

<400> 276
ctccacggtg accgaaaggg atatcaggac cgaggaagag atctaccagt gctgcgacct 60
ggagcccga gcccgcaagg tgatatccgc cctaacggaa agactctacg tgggcgggtcc 120
catgtacaac tccaaggggg acctatgcgg gcaacggagg tgccgcgcaa gcgggggtcta 180
caccaccagc ttcgggaaca ctgtaacgtg ttatctcaag gccgttgcgg ctactagggc 240
cgcaggtctg aaaggttgca gcatgctggt ttgtggagac gacttagtcg tcatctgcga 300
gagcggcggc gtagaggagg atgcaagagc cctccgagcc 340

<210> 277
<211> 340
<212> DNA

<213> hepatitis C virus

<400> 277

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ctcgaccgtt accgaacatg acataatgac tgaagagtct atttaccat cattgtactt      60
gcagcctgag gcgcgtgtgg caatacggtc actcaccaa cgctgtact gtggaggccc      120
catgtataac agcaaggggc aacaatgtgg ttatcgtaga tgccgcgcca gcggcgtctt      180
caccactagt atgggcaaca ccatgacgtg ctacattaag gctttagcct cctgtagagc      240
cgcaaagctc caggactgca cgctcctggg gtgtgggtgat gatcttgtgg ccatttgcca      300
gagccagggg acgcacgagg ataaagcgag cctgagagcc      340
```

<210> 278

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 278

```
Ser Thr Val Thr Glu Ser Asp Ile Arg Thr Glu Glu Ala Ile Tyr Gln
1           5           10           15
```

```
Cys Cys Asp Leu Asp Pro Gln Ala Arg Val Ala Ile Lys Ser Leu Thr
          20           25           30
```

```
Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Arg Gly Glu Asn
          35           40           45
```

```
Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
          50           55           60
```

```
Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Arg Ala Ala Cys Arg Ala
65           70           75           80
```

```
Ala Gly Leu Gln Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
          85           90           95
```

```
Val Ile Cys Glu Ser Ala Gly Val Gln Glu Asp Ala Ala Ser Leu Arg
          100          105          110
```

Ala

<210> 279
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 279

Ser Thr Val Thr Glu Asn Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Ala Pro Glu Ala Arg Gln Ala Ile Arg Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys Gly Gln Asn
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Cys
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Met Leu Val Asn Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Ala Gly Thr Gln Glu Asp Ala Ala Ala Leu Arg
100 105 110

Ala

<210> 280
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 280

Ile Tyr Gln Cys Cys Asp Leu His Pro Asp Ala Arg Ala Ala Ile Lys
1 5 10 15

Asn Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Leu Thr Asn Ser Lys
20 25 30

Gly Glu Asn Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr
35 40 45

Thr Ser Cys Gly Asn Thr Leu Thr Cys Tyr Ile Lys Ala Leu Ala Ala
50 55 60

Cys Arg Ala Ala Gly Leu Arg Asp Cys Thr
65 70

<210> 281

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 281

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Arg
1 5 10 15

Ala Cys Ser Leu Pro Glu Glu Ala His Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Phe Asn Ser Lys Gly Gln Thr
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Ala

<210> 282
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 282

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ala Cys Ser Leu Pro Gln Glu Ala Arg Thr Val Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys Gly Gln Ser
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Val Asp Pro Val Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ser Glu Ser Gln Gly Asn Glu Glu Asp Glu Arg Asn Leu Arg
100 105 110

Ala

<210> 283
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 283

Ile Tyr Gln Ser Cys Ser Leu Pro Glu Glu Ala Arg Thr Ala Ile His
1 5 10 15

Ser Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met Thr Asn Ser Lys
20 25 30

Gly Gln Ser Cys Gly Tyr Arg Arg Cys Arg Ala Ser Ala Val Leu Thr
35 40 45

Thr Ser Met Gly Asn Thr Leu Thr Cys Tyr Val Lys Ala Arg Ala Ala
50 55 60

Cys Asn Ala Ala Gly Ile Val Ala Pro Thr
65 70

<210> 284

<211> 113

<212> PRT

<213> hepatitis C virus

<400> 284

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Ser Ile Tyr Leu
1 5 10 15

Ala Cys Ser Leu Pro Glu Gln Ala Arg Thr Ala Ile His Ser Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Leu Asn Ser Lys Gly Gln Thr
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Ile Thr Cys Tyr Val Lys Ala Gln Ala Ala Cys Lys Ala
65 70 75 80

Ala Gly Ile Ile Ala Pro Thr Met Leu Val Cys Gly Asp Asp Leu Val

85

90

95

Val Ile Ser Glu Ser Gln Gly Thr Glu Glu Asp Glu Arg Asn Leu Arg
 100 105 110

Ala

<210> 285
 <211> 71
 <212> PRT
 <213> hepatitis C virus

<400> 285

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
 20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
 35 40 45

Arg Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
 50 55 60

Leu Val Val Val Ala Glu Ser
 65 70

<210> 286
 <211> 71
 <212> PRT
 <213> hepatitis C virus

<400> 286

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
 1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Ser Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 287
<211> 71
<212> PRT
<213> hepatitis C virus

<400> 287

Leu Thr Glu Arg Leu Tyr Cys Gly Gly Pro Met Phe Asn Ser Lys Gly
1 5 10 15

Ala Gln Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr
20 25 30

Ser Phe Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Thr Ala Ala Ala
35 40 45

Lys Ala Ala Gly Leu Arg Asn Pro Asp Phe Leu Val Cys Gly Asp Asp
50 55 60

Leu Val Val Val Ala Glu Ser
65 70

<210> 288
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 288

Ser Thr Val Thr Glu His Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Ile Gly Gly Pro Met Tyr Asn Ser Lys Gly Leu Gln
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Leu Pro Thr Ser Phe
 50 55 60

Gly Asn Thr Ile Thr Cys Tyr Ile Lys Ala Lys Ala Ala Ser Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Pro Ser Phe Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Val Ser Glu Ser Cys Gly Val Glu Glu Asp Arg Ala Ala Leu Arg
 100 105 110

Ala

<210> 289
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 289

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe

50

55

60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Lys Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Pro Leu Gly
100 105 110

Ala

<210> 290
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 290

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Arg Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Ala

<210> 291
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 291

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ser Gly Leu Arg Asp Cys Thr Met Leu Val Tyr Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Val

<210> 292
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 292

Ser Thr Val Thr Glu Lys Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
65 70 75 80

Ala Gly Leu Arg Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Lys Arg Ala Leu Gly
100 105 110

Ala

<210> 293

<211> 113

<212> PRT

<213> hepatitis C virus

<220>

<221> MISC_FEATURE

<222> (110)..(110)

<223> Xaa represents any amino acid

<400> 293

Ser Thr Val Thr Glu Arg Asp Ile Lys Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ala Ala Leu Thr

20

25

30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Met Thr Cys Tyr Leu Lys Ala Ser Ala Ala Ile Arg Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
 85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Lys Arg Xaa Leu Gly
 100 105 110

Ala

<210> 294
 <211> 113
 <212> PRT
 <213> hepatitis C virus

<400> 294

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Val Tyr Gln
 1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Thr Arg Lys Val Ile Ser Ala Leu Thr
 20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Arg Gly Asp Leu
 35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
 50 55 60

Gly Asn Thr Leu Thr Cys Phe Leu Lys Ala Thr Ala Ala Thr Lys Ala
 65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Asp Gly Val Glu Glu Asp Arg Arg Ala Leu Gly
100 105 110

Ala

<210> 295
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 295

Ser Thr Val Thr Glu Arg Asp Ile Arg Thr Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Gln Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Val Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Gly Cys Ser Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Cys Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
100 105 110

Ala

<210> 296
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 296

Ser Thr Val Thr Glu Arg Asp Ile Arg Val Glu Glu Glu Ile Tyr Gln
1 5 10 15

Cys Cys Asp Leu Glu Pro Glu Ala Arg Lys Val Ile Ser Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Lys Gly Gly Pro Met Tyr Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Leu Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Val Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Gly Gly Val Glu Glu Asp Ala Arg Ala Leu Arg
100 105 110

Ala

<210> 297
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE
<222> (22)..(22)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE

<222> (8)..(8)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (24)..(24)
<223> Xaa represents any amino acid

<400> 297

Pro Thr Val Thr Glu Arg Asp Xaa Arg Val Glu Glu Glu Val Tyr Gln
1 5 10 15

Cys Cys Asn Leu Glu Xaa Asp Xaa Arg Lys Val Ile Asn Ala Leu Thr
20 25 30

Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys Gly Asp Leu
35 40 45

Cys Gly Ile Arg Arg Cys Arg Ala Ser Gly Val Tyr Thr Thr Ser Phe
50 55 60

Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala Thr Arg Ala
65 70 75 80

Ala Gly Leu Lys Asp Cys Thr Met Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Val Ile Ala Glu Ser Ile Gly Ile Asp Glu Asp Lys Gln Ala Leu Arg
100 105 110

Thr

<210> 298
<211> 113
<212> PRT
<213> hepatitis C virus

<220>
<221> MISC_FEATURE

<222> (4)..(4)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (109)..(109)
<223> Xaa represents any amino acid

<220>
<221> MISC_FEATURE
<222> (111)..(111)
<223> Xaa represents any amino acid

<400> 298

Ser	Thr	Val	Xaa	Glu	Arg	Asp	Ile	Arg	Thr	Glu	Gly	Glu	Val	Tyr	Gln
1				5					10					15	

Cys	Cys	Asp	Leu	Glu	Pro	Glu	Ala	Arg	Lys	Val	Ile	Thr	Ala	Leu	Thr
			20					25					30		

Glu	Arg	Leu	Tyr	Val	Gly	Gly	Pro	Met	Phe	Asn	Ser	Lys	Gly	Asp	Leu
		35					40					45			

Cys	Gly	Gln	Arg	Arg	Cys	Arg	Ala	Ser	Gly	Val	Phe	Thr	Thr	Ser	Phe
	50					55					60				

Gly	Asn	Thr	Leu	Thr	Cys	Tyr	Leu	Lys	Ala	Thr	Ala	Ala	Thr	Arg	Ala
65					70					75				80	

Ala	Gly	Leu	Lys	Asp	Cys	Thr	Met	Leu	Val	Cys	Gly	Asp	Asp	Leu	Val
				85					90					95	

Val	Ile	Ser	Glu	Ser	Ala	Gly	Val	Glu	Glu	Asp	Pro	Xaa	Thr	Xaa	Arg
			100					105						110	

Pro

<210> 299
<211> 74
<212> PRT
<213> hepatitis C virus

<400> 299

Val Tyr Gln Cys Cys Asn Leu Glu Pro Glu Ala Arg Lys Ala Ile Thr
1 5 10 15

Ala Leu Thr Glu Arg Leu Tyr Val Gly Gly Pro Met His Asn Ser Lys
20 25 30

Gly Asp Leu Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr
35 40 45

Thr Ser Phe Gly Asn Thr Leu Thr Cys Tyr Leu Lys Ala Thr Ala Ala
50 55 60

Ile Arg Ala Ala Gly Leu Arg Asp Cys Thr
65 70

<210> 300
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 300

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Cys Asp Leu Gln Pro Glu Ala Arg Ala Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala
65 70 75 80

Ala Arg Leu Arg Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Glu Ala Ser Leu Arg
100 105 110

Ala

<210> 301
<211> 113
<212> PRT
<213> hepatitis C virus

<400> 301

Ser Thr Val Thr Glu His Asp Ile Met Thr Glu Glu Ser Ile Tyr Gln
1 5 10 15

Ser Leu Tyr Leu Gln Pro Glu Ala Arg Val Ala Ile Arg Ser Leu Thr
20 25 30

Gln Arg Leu Tyr Cys Gly Gly Pro Met Tyr Asn Ser Lys Gly Gln Gln
35 40 45

Cys Gly Tyr Arg Arg Cys Arg Ala Ser Gly Val Phe Thr Thr Ser Met
50 55 60

Gly Asn Thr Met Thr Cys Tyr Ile Lys Ala Leu Ala Ser Cys Arg Ala
65 70 75 80

Ala Lys Leu Gln Asp Cys Thr Leu Leu Val Cys Gly Asp Asp Leu Val
85 90 95

Ala Ile Cys Glu Ser Gln Gly Thr His Glu Asp Lys Ala Ser Leu Arg
100 105 110

Ala

<210> 302
<211> 13
<212> PRT
<213> hepatitis C virus

<400> 302

Ser Ala Gly Thr Gln Glu Asp Ala Ala Ser Leu Arg Val
1 5 10